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THE NORTH DAKOTA FARMER

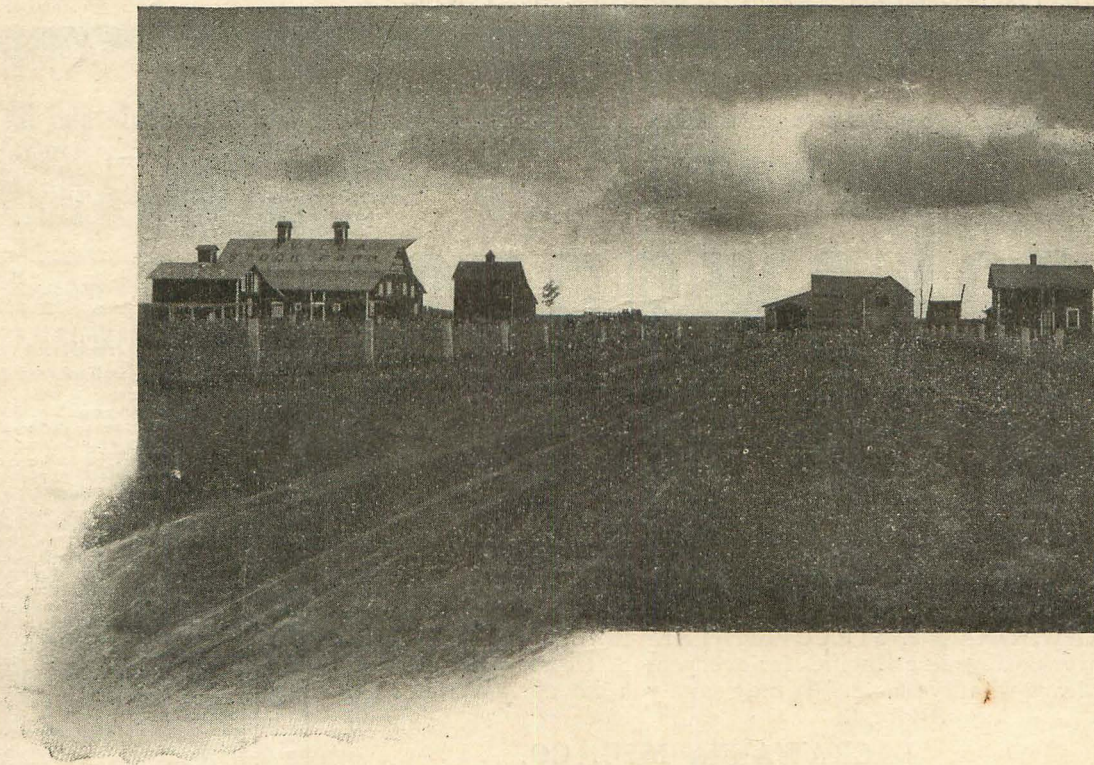


"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 11, No. 8
LISBON, N. D.

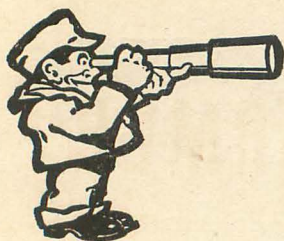
FEBRUARY 15, 1910

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FARGO, N. D.



View of the Envilla Stock Farm, Cogswell, N. D.

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TRACK

INFORMATION

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TRACK

See Awl Offer, Page 11--A Winner

THE NORTH DAKOTA FARMER

Vol. 11, No. 8

LISBON and FARGO, N. D., FEBRUARY 15, 1910

50 Cents a Year

OVER OUR STATE



The Towner County Vegetable Display

THE FARMERS' INSTITUTE Cando Institute

(From Towner Co. Democrat)

The Farmers' Institute held at Cando last Friday, January 7th, was a very remarkable event in one important respect, in which it overshadowed every institute previously held here. We refer to the lively and intelligent interest shown and the experience manifested by a large majority of the farmers present in all of the important farm topics discussed.

As we listened to the farmers talk about their experiments with corn, clover and alfalfa, livestock and crop rotation, and freely compare their experiences with those of the veterans of the experiment station and the lecture platform, the conviction was borne in upon us that we are entering rapidly upon a new epoch in agriculture in which "book farming" and scientific methods will replace the old slipshod way.

The morning session was well attended by "sure enough" farmers in spite of cold and blustery weather. Superintendent Hoverstad opened the meeting in his usual happy vein and assured himself that everybody was in good humor.

Mr. Gregg, who is a pioneer of Minnesota, spoke of the gradual de-

velopment of livestock in that state and particularly of the dairying industry. He compared the Indian tepee that he used for a stable forty years ago with the big barn and silo of the present day. He did not advise the farmers of Towner county to go into dairying by importing the highest type of dairying animals, but advised them rather to make use of the materials nearest to their hands as far as possible, and build up gradually by the use of good sires.

Here are a few cardinal points that Mr. Gregg touched upon: In selecting a cow for dairying purposes, take one with a large "middle piece" that is, large body between the front leg and shoulder and the hind leg and hip. Belly should be large indicating large food consumption, which brings large flow of milk. The back of a good milker should be slim and "steep." If you want a beef cow get one with a flat plump back. The eyes of a dairy cow should be large and full indicating large nerve system.

In selecting a sire either for beef or dairying don't buy one because he has a great pedigree, but be sure that he has a good body and the points and physical proportions that you should expect in an animal of that kind.

The meeting opened promptly at

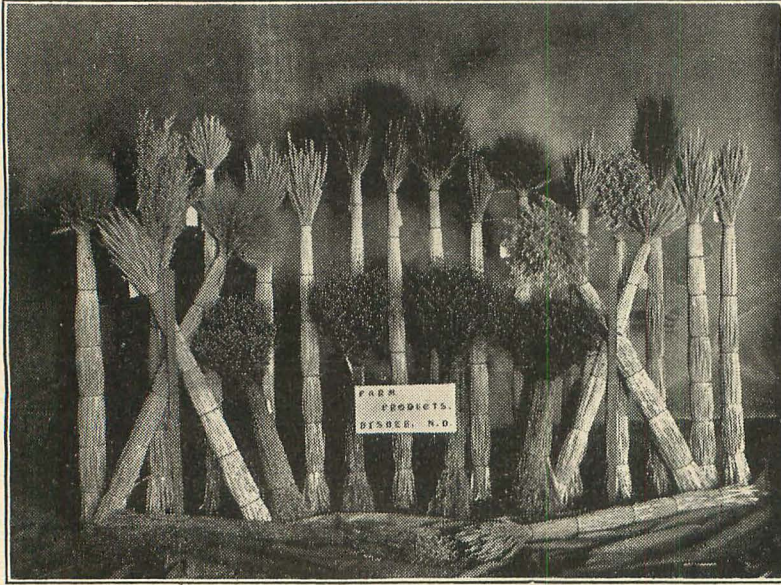
1:30 o'clock with a large attendance. Mr. Gregg opened with a talk on corn growing which followed in the main the principles of the article on corn growing, written for this paper last year by Mr. Shaw and which aroused such widespread interest.

General hints—select seed early, shell away top and bottom kernels so as to make seed uniform in planter. Plant early to avoid frost. Plant straight to make cultivation easy. Plow ground in fall. Drag frequently after planting when land is dry. Build silos—putting up corn this way we avoid shocking, husking, shelling and handling the roughage, and the silage provides excellent "winter pasturage."

Mr. Hoverstad said one good object to be accomplished by the farmers in growing corn, clover and alfalfa, was the evolution of the seeds best adapted to this locality. He called attention to the remarkable record of Jas. Kelly of Devils Lake, who has grown alfalfa for several years and secured an average of seven tons of good alfalfa hay to the acre. Mr. Kelly has declared that he would not sell this land for \$300 per acre.

Mr. Gregg took up the important subject of tree growing. For the "farmstead" he advised the planting of an outside row of willows on the north, west and south sides. Inside of that the regular strip of forest trees, then an inside planting of willow, and inside of that a strip seeded to grass. This would make a very effective snow break. Good trees to plant here of the short-lived variety were the Norway poplar and European birch; long lived varieties, American white elm, hackberry and ash. Plant long-lived and short-lived trees alternately. Short-lived varieties grow more quickly and can be thinned out when the more durable kinds grow up. A fine grove of trees is often the main factor in making a good sale.

The evening meeting was opened by Prof. Hoverstad on the subject of tree culture. Following the advice given during the day as to varieties and manner of planting he spoke at length urging the farmers to all take part in this



The Towner County Grain Display

easy and sure method of enhancing the value of their homes.

He closed his talk on the subject by an illustration where six acres were planted to cottonwoods and in 18 years with ordinary care the product was cut and sawed into lumber, rendering 86000 feet and 600 cords of wood. Figuring the value of the product and the cost of production it is easy to see if looked upon from the standpoint of a crop that it paid better than wheat. Not only that, it left the ground in better shape for succeeding crops, or a start for another grove as the owner desired. The man who plants six acres of trees is prompted solely by the added appearance to his premises, the protection he desires from it and the possibility it will afford him to grow many plants requiring such protection. He figures that what he obtains from the grove in this way fully repays him for the ground used and for the expense and trouble. When it is pointed out to him by the practical experience of a neighbor that besides the enjoyment of the benefits mentioned he has been raising a crop more profitable than any other he has raised it is surprising that he does not go into it and that the farms of North Dakota are not more thoroly dotted with beautiful groves. Plant some trees next spring, not six acres nor four, but one, or whatever you can attend to properly, and then add to the area each year as you can. First of all start right. Get the Agricultural circulars on tree culture, which may be had for the asking, and know how to start right and to continue in such a way that the best results may be obtained.

Prof. Hoverstad closed the evening

meeting by congratulating Towner county on the interest manifested in her farmers' institutes and by congratulating Cando on her splendid school and her equipment for carrying on the advanced courses of study.

MR. SMITH IS MAKING HIS FARM PAY

W. S. Smith, of the Jewel Farm, about seven miles northeast of Kenmare, was in town Saturday and called to tell The Journal editor about his success with cows during the past year.

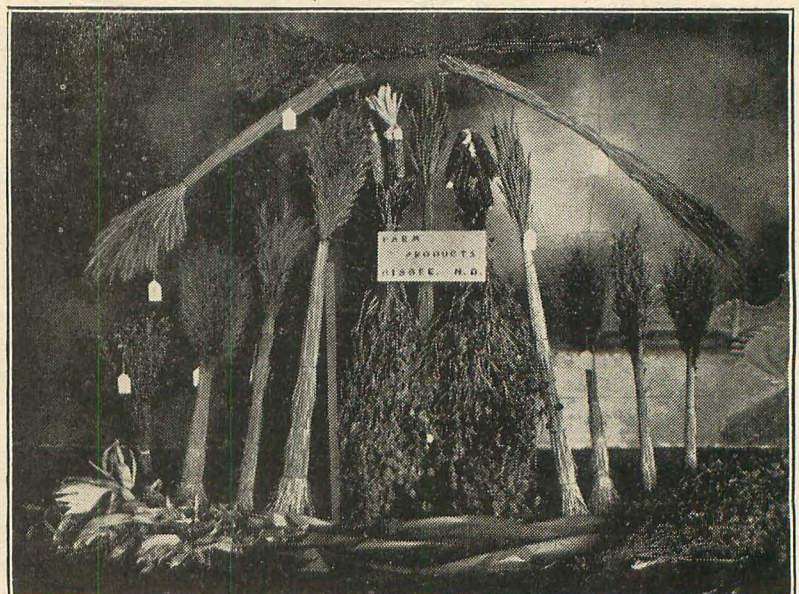
Mr. Smith is one of the farmers in this community who run their farms on business principles, and as a business institution, keeping books on

every item of cost and profit. It is interesting to note what he finds. He keeps only Jersey cows, and from an average of 14 for the year, Mr. Smith finds they have brought him \$912.28. Of this amount, \$891.05 was for butter, and \$21.23 for cream and buttermilk. During this year his family of from four to six used all the butter and milk they wanted; the harvest hands and threshers were fed; for ten days he had from six to ten carpenters; and besides this he fed his several dogs and cats all they wanted. So in considering the sales, all these other items must be given due credit.

He gives his cows—during that part of year when he feeds—five quarts of bran twice a day. He finds that during the short time that he fed, the total expense of feed averaged about \$1 per day. When he has it, he feeds fodder. Following is the production of butter by each month:

January.....	233' pounds
February.....	230' "
March.....	194' "
April.....	222' "
May.....	265' "
June.....	439' "
July.....	320' "
August.....	209' "
September.....	239' "
October.....	261' "
November.....	300' "
December.....	383' "

By referring to the above figures it will be seen that May picked up, as the grass came on. June was the largest month owing to plenty of grass, and Mr. Smith says he fed a little, also. Then it will be noticed that July fell off 119 pounds. (It must be borne in mind that these



The Towner County Grain and Grass Display

"I look to see the dairy industry in North Dakota get a greater impetus from this meeting. The farmers of the state, especially in the Red River valley are just beginning to realize what results can be obtained from the cow and the records which will be shown at this coming meeting will be a further eye-opener."—Ex.

THE FARMERS' FRIEND

Generally speaking we farmers have no better friend than the local newspaper. Our home paper is particularly a farmers' paper, supported and directed principally by the farmers who compose the very backbone of its subscription list. They compose the large class for which the enterprising merchant advertises.

Now this being the case, it behooves us farmers to stand by our local paper and we can do it in two ways, first, by always being paid up in full on our subscriptions, and second, by patronizing the merchants who advertise in our local paper; for those too penurious to advertise and thus help to support the local paper, have no right to our patronage.

I promise, hereafter, to do my trading with the man who does his share in supporting the local paper and thus contribute his share to the "Farmer's Friend." I will no longer support or trade with a man who will not advertise and help build up a business which is one of the most important industries of any city—The Local Newspaper—and trust that every farmer in this locality will see this matter in the same light and if we can agree on this one thing we can all in our own little way help to boost the town that we trade in.—A Local Farmer in Exchange.

Rev. Samuel Currie, of Park River, sold \$6,000 worth of milk and butter during 1909 from a herd of thirty-eight cows.—Williston Herald.

A farmer near Lidgerwood recently marketed two year-old hogs whose combined weight was 990 pounds. "Beat that if you can," says the Broadaxe.

WON PRIZE WITH CORN

Gus Schindele put Tolna and Nelson County on the corn map with some of the corn he grew this summer, when he went to the Grain Growers' Convention last week. His exhibit of Triumph Flint corn won third prize in its class. This is one of the first, if not the first, attempts of the farmers of the neighborhood to win prizes at the larger shows and the work that Gus has put into it and the success achieved, is worthy of honor.

Third prize is not bad for a first attempt and we expect to see Mr. Schindele or some of the other farmers doing still better next year and all other years.—Tolna Tribune.

THE COST OF RAISING WHEAT

Editor Wardell of the Pembina Pioneer Express treats all topics interestingly—even that of the cost of wheat raising, and in last week's issue he comments as follows on the Society of Equity's statement of wheat cost:

What it costs to raise a bushel of wheat depends on many factors. Soil, sunshine and showers, weeds, hail, windstorms, floods, bugs, rust, blight, misfortunes generally, or good fortune for a number of years.

Wheat crops have been raised in this valley this year that paid \$20 or more an acre over and above the cost of preparing the ground, seeding, cutting and threshing, but there have been vastly more crops raised that barely paid these expenses. The principal factor, is the man behind the plow. As in every other business, method and manner make all the difference between success and failure, other things being equal.

The actual labor cost of putting in and placing in shock of an acre of wheat approximates \$5; to this must be added the price of twine and the threshing bill. This means good wages to the person hired to do it, or the farmer who puts it in, both for himself and horses for the number of days work employed in the specific work.

But it is quite evident that if the farmer, or man hired, did nothing else than cultivate that one acre of wheat that he would be a big loser at the end of the year, because one acre of wheat at any price possible would not support him and feed his horses for the time.

Thus in the general round-up of the year's work there might be a loss even at \$1.25 per bushel on a thirty bushel crop, unless the farmer has figured to keep himself, hired men and teams busy working at the same wage season

Our friends "down east" however, must not forget that while they are receiving dividends on their watered stock that the farmer finds it necessary to water his stock also—sometimes twice a day—and in winter especially it is a cold disagreeable job—and he wants his pay for that work in the winter as well as for his work in the summer; or, in planer terms, while the farmer does raise his crop of wheat in about four months' time he is really spending a whole year at it—in time, tho not in labor, and he must eat, drink and wear during that time. If one figures that it takes twelve months to raise the bushel of wheat it makes the cost price considerably more, but the figures given by the Sun are correct only when the actual time spent in the field is counted.

GRAND 5-YEAR OFFER, PAGE 20

AIR RIFLE
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J. E. MERRITT, - Manistee, Mich.





C. H. Nelson and his Bisbee Home

figures are for sales only.) This fall-
ing off is due to two reasons. In
the first place the feed was cut off
entirely, and second, Mr. Smith boarded
from six to ten carpenters for ten days—
which is quite an item. In August the
sales fell down to 209 pounds, but the
cows had been on pasture only for two
months, some were dry and harvest
hands were fed. In September he began
feeding some fodder and some bran, and
notwithstanding they had threshers
and extra help, the sales productions
picked up to 239 pounds. During Octo-
ber, November and December these
figures increased until they finally
reached 383 pounds for December.

During the eight months from March
to October, inclusive, he sold his butter
for 25 cents, and during January, Febru-
ary, November and December he re-
ceived 30 cents. The two totals
mounting to \$891.05. During the
months of June and July Mr. Smith
packed 226 pounds, 200 of which he sold
at 30 cents, or an advance of 5 cents,
which made \$10 extra, and this amount
is included in the above figures. Adding
to this, the sum of \$21.23, we have the
total of \$912.28 for the year.

Speaking further regarding some
items which he had kept track of
Mr. Smith found the following:

When he fed fodder alone, six gal-
lons of cream churned 15½ to 16
pounds of butter.

When he fed bran the highest he re-

ceived from six gallons was 24 pounds,
but the average was 23 pounds.

When feeding bran he weighed out
48¾ pounds of cream, from which he
churned 23 pounds of butter.

The above figures are interesting and
we would like to have others do the
same, not only on cows alone, but in any
or all branches of the farm.

For the year of 1909 he received
\$495.17 from other sources as follows:

Poultry and Eggs.....	\$190.87
Cattle.....	215.35
Pork.....	58.95

\$465.17

Adding this amount to that of
\$912.28 for butter, we have a total
of \$1,377.45 for produce for the year
1909, besides his crops of various kinds.

Another interesting item which he
gives us is the increase of his produce
business by years, which is as follows:

For year 1906 produce sold	\$331.05
" " 1907 " "	423.64
" " 1908 " "	710.00
" " 1909 " "	1377.45

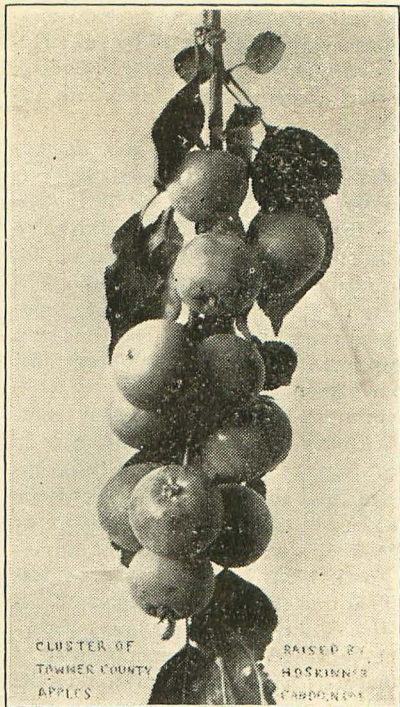
And thus it will be seen that Mr.
Smith knows what he is doing all the
time and he finds it interesting.

NOT SO BAD

Early last spring J. C. Arduser
purchased a half section of land in
Saratoga township, 5 miles north of
Dickey and paid therefor \$26.50 per
acre. He broke up the entire 320
acres and seeded it to flax. It averaged
a little over 15 bushels to the acre
or a total of 4800 bushels and was sold
at \$2.10. In other words Mr. Arduser
paid \$26.50 per acre for this land and
the first year realized \$31.50 per acre or
\$4.00 an acre more than he paid for it
and still people will tell us that it does
not pay to farm in North Dakota.
Show us.—Dickey Reporter.

In driving over the country you will
occasionally see, especially in Russian
neighborhoods, large piles of barnyard
manure cut into stove wood blocks
and stacked into ricks like hay, which
the settlers use as fuel instead of coal.
This is considered economy. Another

farmer here last season spread this
sort of cheap fuel over a forty acre
field and harvested five bushels to the
acre more than he did off his untreated
land. This land will not need fertil-
izing again for seven or eight years
and will show better results every year
than it did the first. The first method
is false economy. The second method
is the only way at the present time to
keep Dakota land producing what it
should. A farmer who understands
his business will make his land produce
more with less labor every year.—Ex.



CLUSTER OF
TANNER COUNTY
APPLES
RAISED BY
HOSKINER
CARDNEY

BIG DAIRY MEETING

Prediction of a Large Crowd at James-
town, February 24-25

"The state dairyman's convention,
which will be held at Jamestown Feb.
24 and 25, is going to be the greatest
dairy meeting ever held in the state,"
said M. J. Cort, one of the biggest
boosters for the dairy in the north-
west.

"It will be the first independent
dairy meeting ever held in the state
in the first place, and Dairy Commis-
sioner Flint is carrying on a boosting
campaign that is bound to make it a
winner. There will be some of the
best known dairymen of the nation at
the meeting. Minnesota will send over
a big delegation including her dairy
commissioner and there will be a
good representation of the cream-
ery and dairy men from every part
of North Dakota.

OF GENERAL INTEREST

WHY SOILS DO NOT WEAR OUT

J. H. Worst, A. C. N. D.

Much is said and written confirming the theory that soils do not wear out. Northern Europe is cited as a case in point where crops have been grown for more than a thousand years and yet the soil is producing more per acre than during any past period.

It is admitted, however, that much depends upon the individual farmer. A casual inspection of farming methods practiced in Northern Europe should

take into consideration the means employed to keep up their fertility.

China supports a very dense population but everything possible in the form of fertility is applied to the soil which is thus kept rich and productive.

The mere fact that so much depends upon the individual is evidence that management has much to do with soil productivity. We have all observed the difference between a well managed farm and one that has been mismanaged. We have also noted the length of time required, when a mismanaged farm changes hands, to bring the farm back to a highly productive state. In this

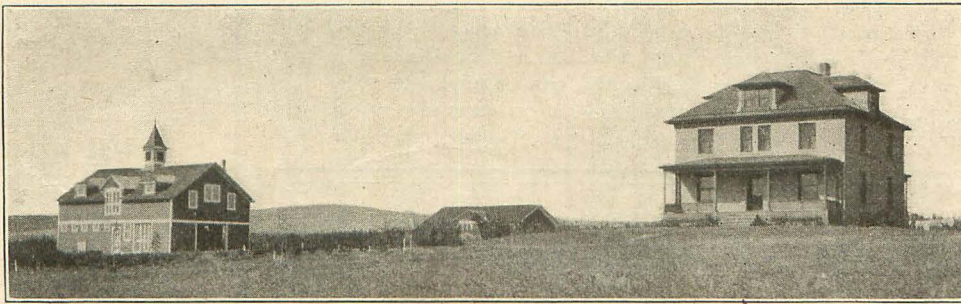
and abundant cultivation, there is no reason why a farmer should not enjoy prosperity. Anything short of all these, introduces the element of chance and the possibility of partial or complete failure of crops. The intelligent farmer will eliminate, as far as possible, every element of chance. He has enough "chances" to deal with at best, without adding to them thru his indifference or carelessness.

GUMPTION ON THE FARM

Soft snaps in youth make hard beds for old age.

Believing the best of a man will in most instances incite him to do his best.

One runs no more risk in believing all



Sub-Experiment Station, Dickinson, N. Dak.

convince any one of the importance of fertilizers and their relation to the constantly increasing productivity of their soils. Everything possible is converted into manure. The Belgian has his cemented reservoir into which he dumps the straw manure from the stables and every other form of roughage obtainable. The Hollander, and in many instances the Englishman, has the manure pile under cover and they all guard this element of agricultural prosperity with great care.

Crops are rotated and a good portion of the crops in the rotation are adapted to the improvement of the soil, rather than to secure a money crop. Legumes are extensively grown,—not only clover and alfalfa, but also beans, peas, and vetches are grown. Cattle and sheep are reared in rather large numbers with a view to securing fertility as much as direct profits from the animals.

In addition to all this, large quantities of commercial fertilizers are applied to the soils of Northern Europe. The very best of tillage is given the land,—stubble ground being plowed three times before the succeeding crop is planted. This, doubtless, accounts for the fact that the soils of Northern Europe have not deteriorated in productive power, tho they have been producing for a thousand years. The statement, therefore, that farm lands do not wear out is accounted for when we

case, the farm management depended largely upon what was applied to the soil, annually, as well as to its cultivation. In the face of all the facts available, it is poor policy to divert the farmers' attention from the real issue.

Many other causes, doubtless, enter into this problem and should be given due consideration, but the question of applied fertility and cultivation, with conservation of fertility in view, should not be lost sight of nor ignored on that account. The soil doctors, in both instances, are correct and each one should be given due credit for his discoveries and his remedies but neither should exclusively occupy the field of agricultural advisor.

The question of soil fertility must not, under any circumstances, be ignored. The farmer should understand the condition of the soil he has to deal with, the availability of the different forms of plant food, and what should be supplied to improve its tilth and balance the plant food it contains. He should also understand the diseases his crops are subject to and the sort of rotation or other remedies he should apply as curative agents for fungus, soil diseases, or bacterial disorders. He should also understand the diseases to which the growing plants are subject and treat his seed grain with a view to preventing plant disease.

With fertile soil, clean, healthy seed,

he hears than he does in believing all he tells.

Somebody has been writing about the habit of cows. Well, at any rate, they haven't the tobacco or the booze habit.

Sitting around the store stove disputing the question of who found the North Pole will not contribute a single chunk toward the filling of the ice house.

It is better to be safe than sorry. The savings banks may not pay a very high rate of interest, but they are safe,—and that's more than can be said of most of the numerous "splendid opportunities" that are advertised in capital letters.

The carpenter we hired had a handy little arrangement in which to keep his bits when not in use. He had a piece of overall cloth about two feet long, folded up at one side, with pockets sewed all along about the length of a bit and of different sizes according to the diameter of the bits to be slipped into them. Then by wiping them dry and putting them into those pockets and rolling the whole thing up, he had them in good, compact shape and as snug as a bug in a rug. I thought it a pretty good idea.

To prevent pumps from freezing: Drill a small hole, say one-sixteenth of an inch or less, in pump stock,—below well or cistern cover, far enough down so that frost will not reach it. With this method (which I first used nearly forty years ago) the pump is always primed; and, in warm weather, all the water that is

pumped is fresh and cool. If desirable to prevent water from vent in pump stock striking wall of well, place a tin collar around stock, just above the vent; collar should be five or six inches wide, flaring out over vent, and hang just low enough to catch the water.

The best time to break corn stubs is when it is not far from zero weather. If a good heavy pole is used, they will then snap off next the ground and will give no trouble next year, as is sometimes the case when they are poled late in the season and the weather is only moderately cold. Have a good strong pole that will reach across at least ten rows. Put a team on each end. If the pole is small at one end and large at the other, make the weight even for each team by hitching about a foot from the large end, and about four feet from the small end of the pole. If not cold enough to break the stubs all off, first pole all the stalks down one way, then turn and pole them back again. This will bring them all down.—Farm Journal.

THE MANURE SPREADER

By T. A. Hoverstad, Superintendent of
Farmers' Institutes
(Tri-State Grain Growers' Convention)

The subject of the conservation of our national resources is becoming a very popular one in our country today. This is a matter that is not simply discussed by individuals locally, but it is becoming a national problem. The saving of the water powers, the coal and other mineral lands, and the proper management of the forests are subjects that are being given a great deal of study.

The greatest material resource that we have in our country today is the fertility of our soils. How to manage the soils in such a way that large crops can be produced every year and still leave the land in such a condition that good crops can be produced every succeeding year is certainly a problem worthy of a great deal of attention.

Get Results from the Soil

No farmer can secure the proper results in his farming unless he has a Scientific Knowledge of all that pertains to the treatment of the soil, and the planting, culture, and harvesting of his crops.

There are very few present day farmers who fail to recognize the value of a thorough, practical education in the Science of Agriculture, still all do not avail themselves of the excellent opportunities for learning.

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To those who want to make their capital or savings bring to them an income in a well established business and at the same time the opportunity for extraordinary profits, we offer to a limited number, shares in The Prince Rupert Real Estate Investment Co., Ltd., at par \$10.00 per share.

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As part of our plan for handling our rapidly growing business and to increase its capacity, we have concluded that we would go directly to the public, with whom we have always satisfactorily dealt and give them the opportunity to subscribe to our issue of shares, thereby sharing equally with us, in the large profits of the Company.

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By placing our shares as we do among individual investors, we are building up an extensive co-operative organization, each member of which has the opportunity and will be interested in adding to the profits of the Company, because by so doing he adds to his personal profits.

Such offers rarely, if ever, reach private investors, and we advise you to send your subscription for shares at once.

Purchasers of the stock may send one-tenth of the total subscription with the order and the balance in nine monthly payments.

The Prince Rupert Real Estate Investment Co., Ltd.,
Prince Rupert, B. C.

SEE AWL PREMIUM ON PAGE 11

The fertility of the soil depends largely on the composition of that material from which the soil is made. Our soils are largely made from the rocks, and are also made up from the organic matter that has been in and on the soil. The soils of the northwest have been of exceptionally high fertility. This is because the original rock from which the soil is made contained all the necessary ingredients for the formation of a good soil. Before the settlers came in there were grasses and leguminous plants growing in abundance. These wild legumes furnished nitrogen to the soil just as the cultivated legumes do today. Even in the extreme western part of the state botanists have identified thirty to forty different kinds of leguminous plants. In a measure this accounts for the fertility of the virgin soil. We also have learned that wild animals roamed over these prairies in very large numbers when the early settlers came here. This had probably taken place for countless ages before the white man came into the country. Wherever these wild animals, like the buffalo and antelope, died their carcasses decayed and this, also, accounts for part of the fertility in the soil, especially the phosphoric acid. We also found that the prairie grasses were very frequently burned off, destroying probably some of the fertility, but the potash of the soil was retained. Grasses grew every year and these decayed at the close of the season and helped to make the humus for the soil for the succeeding crops. There is no wonder that a large amount of plant food was available and the soil was in good condition for the production of a good grain crop.

Shipped Out Much Fertility

When man settled on these lands conditions changed. The wild animals were destroyed, the virgin soil was broken up so the grasses and legumes did no longer grow on the soil, prairie fires discontinued and grain crops were being produced in large amounts, and these, ever since the first settlers came in, have been shipped out of the state, taking away every year millions of dollars of fertility. The amount of livestock in our state today may be just as large as the number of wild animals in early days, but these are also exported from the state, and if we wish to buy back again the fertility in the form of commercial fertilizers, such as steamed bone meal, we have to pay a large price per ton.

This practice of selling the grain away from the state is not to be criticised. It has been a matter of necessity, and as a result North Dakota is a very wealthy state today. There was enough fertility so that North

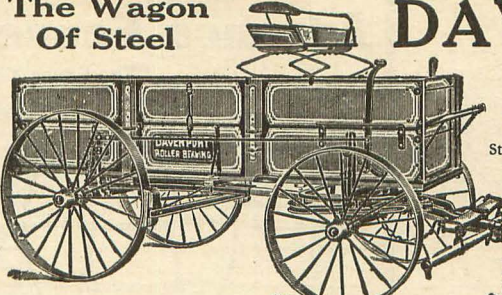
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Learn how "bishopsing" is done—how a "heaver" is "shut"—a roarer "plugged"—how lameness, spavins, and sweeny are temporarily hidden—the "burglar" dodge—the horshair trick—cocaine and gasoline doping—the ginger trick—the loose shoe trick—in short how to beat **ALL** the games of crooked auctioneers and dealers.

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North Dakota Farmer,

Lisbon, N. D.

Dakota could spare a good deal, but this practice cannot continue for an indefinite period of time. This does not mean that grain growing will discontinue. Probably as much grain will be grown in the future as there has ever been in the past, if not more, and it can be done with safety.

In conversation with Professor Ladd of the agricultural college, he informs me that there is no necessity to discourage the farmers from growing grain, but give them all the encouragement possible. How then can they grow grain and receive their cash returns for it, and still not lose the fertility of the land? Professor Ladd's explanation of this is very simple, and is a cause for great comfort. When we produce a crop of wheat, we have both wheat and screenings. These screenings should be separated from the wheat and retained on the farm. Instead of shipping the wheat from the state as is now the case we should have mills so that the grinding can be done in this state and simply the flour sold, but the bran and the shorts retained. The chemist tells us the ingredient most necessary to retain in the state is more largely found in the bran and shorts, and it is only a small amount that is found in the flour. It is flour that the rest of the country is in need of, and that is the thing that North Dakota can spare to the best advantage.

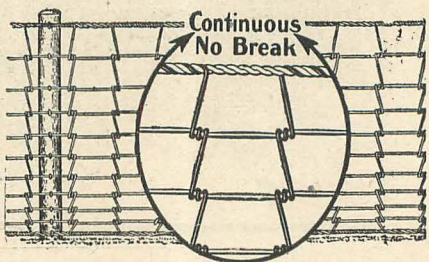
Things to Build Up State's Soil

On making an inventory of the things that we have in our state that will help to build up our soil, we have the straw, the by-products from our grains, the grasses, the legumes, the coarse grains, and other crops that are grown for feeding purposes. It is too expensive and wasteful to use these by-products directly as fertilizers. It is a wasteful thing to turn under a crop of grasses or clovers, because we should first get a profit from them. Instead of using them directly for fertilizers they should be fed on the farm, and there is no way that the fertility can be kept up on the soil without the use of livestock on the farm. By feeding these crops we receive a profit from them and at the same time retain most of the fertilizing ingredients on the farm. When we feed young growing animals about fifty per cent of the fertility is retained on the farm, with dairy cows about 75 per cent, with horses and beef cattle from 85 to 90 per cent, and animals that neither gain nor lose in weight retain close to 100 per cent. A ton of manure from horses and cattle is valued at about \$2., from sheep and hogs about \$3., and from poultry, about \$7.00 per ton. We

OURAWLOFFERTAKES, PAGE 11

Advance Fence Straight to You

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We Pay the Freight and We Guarantee Safe Delivery to You

An offer for the farmer who wants the best fence produced at the lowest price a lifetime fence can be made for. Advance Fence isn't just a boundary line—it stands for system and advance value.

in property. Advance Woven-wire Fence is the best-looking—strongest-constructed—longest-lasting fence on the market. To prove it to you, we make our great offer: If the fence isn't satisfactory, send it back at our expense. Advance Fence is made of solid wire—not wire cut and spliced again. A cut wire weakens. Our stay wire is continuous, woven in with the main top and bottom wire, running the entire width of the fence from one stay to the next. Made of the best basic, open-hearth steel, galvanized with a heavy coat of 99 per cent pure spelter—that means rust-proof. Advance Fence always stays taut—straight and handsome. Prove it for yourself. Write us for all particulars. Remember, we pay freight and guarantee safe delivery.

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You Can Plow 40 Acres a Day

Forty acres are an easy possibility with the REEVES STEAM MULTIPLE GANG PLOW.



The only really successful outfit is the **Reeves Flexible-Frame Steam-Lift Engine Gang Plow** because it does perfect work in all conditions of land. Flexible frame and running of plows in pairs gives REEVES PLOWS a great advantage over others. There are a dozen points of Reeves superiority.

WRITE FOR FREE BOOK telling the whole story of steam plowing. Shows steam-plowing scenes and gives letters from steam-plow users.

REEVES & COMPANY
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have in the United States about twenty million horses and sixty million cattle, fifty million sheep and fifty million hogs. Each year from a horse we get about \$25 worth of manure, and from cattle about \$20, sheep about \$10, and hogs about \$2. This is based on the chemical composition and the commercial value of each of these fertilizing ingredients. There is, therefore, produced in the United States two and a quarter million dollars of fertility. It is estimated that about seven hundred million of dollars of this manure is wasted every year. By saving the manure and using straw for litter we find that the amount of manure from a horse will be about five tons a year, and cattle about fifteen tons, hogs one ton, sheep $\frac{3}{4}$ ton. For every ton of straw that is used in bedding we usually get about five tons of manure. There is probably needed every year from one to one and a half tons of straw for each animal. Figuring on this basis, if a quarter section of land is properly stocked, the amount of manure produced each year should be worth from \$300 to \$500.

How to Apply the Manure

How should this manure be applied? The easiest way, and probably the most

practical way, is to take the manure directly from the barns and apply it to the lands immediately. This method is becoming more and more popular every year. One ton of decomposed manure is worth very much more than one ton of fresh manure, but it has taken several tons of the fresh manure to make one ton of the composted manure, and it is difficult to so compost the manure that little or none of the fertilizing ingredients will be lost. The loss from leaching and fermentation in the barn yard is often very great.

The popular method of applying the manure at the present time is to spread it very thinly. Very often we find when there is a heavy application of manure on grain land we have a large amount of straw, but very poorly filled heads. This may possibly be due to the fact that the fertilizing ingredients are out of proportion. The later experiments conducted at the agricultural college at Fargo under Professor Bolley indicates that the excess of nitrogen in manure has the effect of weakening the straw, thereby giving plant diseases very much more chances to do harm. Professor Bolley in his experiments is not opposed to the application of barnyard manure, but he

wants it applied more wisely than has been the case before. The experiments indicate that it is wise to spread it evenly and thinly, and in this way more land can be manured and the land can more frequently receive an application.

Labor An Important Item

The labor problem is an important item on the farm. One of the disagreeable jobs on the farm is the spreading of manure. It is difficult to secure labor to do even the most important work. Whenever we can advantageously substitute a machine instead of hand labor, we certainly should do so. The manure spreader was invented close to the time when we were very much in need of it, and I believe it is a very fortunate thing we have the machine. It spreads the manure more thinly and uniformly than we can do by hand. It is saving of labor, the manure will cover a very much larger area. By tearing the manure to pieces the manure will come more in contact with soft grains and better results can be expected. It is a saving of labor, and is as much of a necessity on the farm now as any other farm machinery.

Trees for Windbreak, Shelter, Shade, Ornamental Hedge and Fruit. Send for free sample of our Extra Early Sweet Corn.

HOLLAND NURSERY
Bismarck, North Dakota

JANUARY CROP REPORT

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates, from reports of correspondents and agents of the Bureau, the numbers and values of farm animals on farms and ranges in the United States on January 1, 1910, as follows:

Farm Animals		Per Cent Comp'r'd With January 1, 1909	Numbers	Average Price Per Head	Total Value
Horses.....	1910	101.9	21,040,000	\$108.19	\$2,276,363,000
"	1909		20,640,000	95.64	1,974,052,000
" Average,.....	1899-1908			66.17	
Mules.....	1910	101.7	4,123,000	119.84	494,095,000
"	1909		4,053,000	107.84	437,082,000
" Average,.....	1899-1908			78.69	
Milch Cows.....	1910	100.4	21,801,000	35.79	780,308,000
"	1909		21,720,000	32.36	702,945,000
" Average,.....	1899-1908			29.85	
Other Cattle.....	1910	95.7	47,279,000	19.41	917,453,000
"	1909		49,379,000	17.49	863,754,000
" Average,.....	1899-1908			18.62	
Sheep.....	1910	102.0	57,216,000	4.08	233,664,000
"	1909		56,084,000	3.43	192,632,000
" Average,.....	1899-1908			3.06	
Swine.....	1910	88.2	47,782,000	9.14	436,603,000
"	1909		54,147,000	6.55	354,794,000
" Average,.....	1899-1908			6.24	

Compared with January 1, 1909, the following changes are indicated: Horses have increased 400,000; Mules increased 70,000; Milch cows increased 81,000; other cattle decreased 2,100,000; Sheep increased 1,132,000; Swine decreased 6,365,000. In Average value per head, horses increased \$12.55; mules increased \$12.00;

A Premium Worth Having

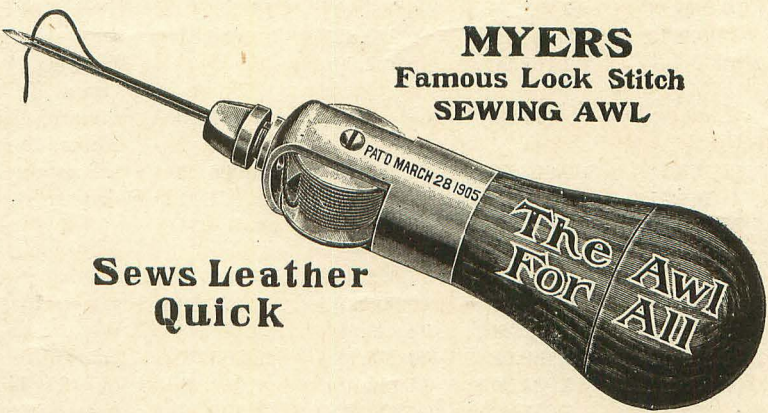
This awl is one of the handiest tools about the farm. Would you like one without cost? The Regular Price is \$1.00.

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Famous Lock Stitch
SEWING AWL

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There are four ways by which you may own one of these awls: First, Send your renewal and one new subscription with \$1.00. Second, Send two new subscriptions and \$1.00. Third, Send renewal for two years and \$1.00. Fourth, Send \$1.00 and we will renew your subscription and send the North Dakota Farmer for six months to any three persons in this state. The awl will be sent post paid.

Address,

NORTH DAKOTA FARMER, Lisbon, N. D.

Milch cows increased \$3.43; other cattle increased \$1.92; sheep increased \$.65; swine increased \$2.59.

In total value, horses increased \$302,311,000; mules increased \$57,013,000; milch cows increased \$77,363,000; other cattle increased \$53,699,000; sheep increased \$41,032,000; swine increased \$81,809,000.

The total value of all animals enumerated above on January 1, 1910, was \$5,138,486,000, as compared with \$4,525,259,000 on January 1, 1909, an increase of \$613,227,000, or 13.6 per cent.

Nat C. Murray,
Acting Chief of Bureau, Chairman.

John J. Darg,
Halsey M. Rhoads,

John Cownie,
Samuel A. Jones,
Crop Reporting Board.

Approved:

W. M. Hays,
Acting Secretary.

FINANCIAL STATEMENT. "WHERE THE MONEY GOES."

Receipts and Disbursements 1909, State Auditor's Office

11,837 checks issued during year 1909.

Balance—all funds. Cash on hand Jan. 1, 1909	\$1,013,571.61
Collections—1909. All sources to credit all funds	4,407,564.13
Payments—1909. Checks issued, all accounts	\$4,403,489.04
Balance—all funds. Cash on hand Jan. 1, 1910	1,017,646.70
	\$5,421,135.74 \$5,421,135.74

Above statement shows the financial condition of North Dakota in total on January 1st, 1909, and January 1st, 1910.

Following is given detail statement showing the balances of the several state and institution funds on January 1st, 1909, and January 1st, 1910. The total collections and the total payments for the year 1909 are also given for each account

D. K. BRIGHTBILL,

State Auditor.

	Balance Jan. 1, 1909	Collections 1909	Payments 1909	Balance Jan. 1, 1910
General Fund	23,234.28	1,387,831.60	1,393,329.38	17,736.50
Asylum Bond Sinking	416.50	95.06	7.54	504.02
Bond Interest.....	25,100.41	22,114.36	26,162.76	21,052.01
Common Schools.....				
Permanent Fund.....	450,305.06	986,850.83	983,804.19	453,351.70
Interest & Income.....	41,801.39	762,465.68	771,787.46	32,479.61
Fines, Penalties & Forfeitures.....	1,657.30	15,775.60	14,611.95	2,820.95
Wolf Bounty.....	8,320.27	46,510.01	41,355.00	13,475.28
State Bond Sinking.....	35,050.34	23,252.31	..	58,302.65
Oil Inspection Fund.....	69,956.24	45,603.55	100,000.00	15,559.79
Hotel Inspection Fund	449.13	3,034.00	2,896.82	586.31
U. S. Aid Soldiers' Home		2,137.50	2,137.50	
Special Fund N. D. Historical Society.....		177.00		177.00
Twine & Cordage Plant				
Operating.....	115,755.73	300,663.56	281,423.24	134,996.05
Construction.....	164.91			164.91
Sinking.....	35,320.34		6,760.00	28,560.34
One Mill Tax (Educational)				
State University.....	5,835.79	76,708.78	77,028.38	5,516.19
Agricultural College.....	3,511.08	46,424.77	46,603.27	3,332.58
Valley City Normal.....	2,615.09	34,772.34	34,895.48	2,491.95
Mayville Normal.....	2,276.13	30,160.68	30,273.14	2,163.67
School for Deaf.....	1,095.84	14,035.30	14,113.93	1,017.21
School of Forestry.....	357.18	4,657.90	4,679.33	335.75
Academy of Science.....	677.93	9,223.28	9,244.65	656.56
Industrial School.....	1,186.37	16,140.74	16,178.12	1,148.99
Armory Fund, N. D. N. G.	2,000.00		2,000.00	
Permanent Fund				
State University.....	3,066.09	44,156.39	46,906.50	315.98
School of Mines.....	2,499.90	17,688.96	17,007.49	3,181.37
Agricultural College.....	6,087.85	70,023.27	80,096.39	*3,985.27
Mayville Normal.....	1,380.58	12,842.50	13,973.63	349.45
Valley City Normal.....	1,705.42	21,951.56	21,806.04	1,850.94
School for Deaf.....	2,303.28	15,065.72	15,376.45	1,992.55

Education Means Power

True education—not mere "book learning," but the knowledge of how to do things that are worth while, means power and success to its possessor.

The American Woman's League is organized largely for the purpose of providing its members and their families with ample opportunity for useful education. The greatest and most unique educational equipment ever known has been drawn together by the League at its Capital City, University City, (Saint Louis) Missouri, and is daily benefiting its many thousands of members. Under the League plan the subjects taught, ranging from Stenography, Typewriting, Bookkeeping, and Dressmaking, to Sculpture, Drawing, Painting, and Ceramics, are taught to its students right in their own homes by the direct Individual Correspondence Method brought to a fine art by the best brains and talent that ample money resources can command. Those students who show exceptional ability and genius are brought to University City at the League's expense and their educations in their chosen professions carried as high as their abilities will permit, entirely at the expense of the League.

The enormous revenue which the League receives and requires to carry on its great work is the result of co-operative effect—not cooperative payment—on the part of its members. The members pay no money. Membership for life is easily obtained without a dollar of expenditure. Once a member, always a member, and every right and benefit is yours without charge, as long as you live.

The League's plan is worthy of investigation by every serious-minded person, and especially by parents who have boys and girls whose future and education they are concerned about.

Full, complete and convincingly detailed information will be sent to any address promptly upon receipt of a post card request. Address

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7191 Delmar Blvd., University City, St. Louis, Mo

INSTITUTES SCHEDULED FOR FEBRUARY

Cavalier, Feb. 11th and 12th.
Hannah, Feb. 14th and 15th.
Park River, Feb. 16th and 17th.
Devils Lake, Feb. 18th and 19th.
Buxton, Feb. 21st.
Grand Forks, Feb. 22nd and 23rd.
Sharon, Feb. 26th.
Nome, March 1st.
Jamestown, Feb. 24th and 25th—
Dairymen's Convention.

A. C. COLLEGE NOTES

By G. W. Randlett

One of the most perfectly and economically planned buildings in the world now stands perfected on the campus of the North Dakota Agricultural College. This is the new veterinary building. There are three main compartments designed respectively for instructional, hospital, and dissecting rooms. The first comprises the main part of the building and includes lecture rooms, research and student laboratories, clinic, museum, stock rooms, incubator rooms, offices, etc. No detail has been for-

Hospital for Insane.....	3,466.99	6,367.53	8,702.40	1,132.12
Soldiers' Home.....	5,951.23	15,103.40	17,431.78	3,622.85
Blind Asylum.....	2,193.60	11,926.32	12,052.75	2,067.17
Industrial School.....	2,689.12	16,694.63	18,715.99	667.76
Academy of Science.....	4,445.84	18,350.63	21,071.01	1,725.46
Capitol Building.....	74,019.04	21,255.91	1,349.48	93,925.47
Reform School.....	3,066.39	17,431.91	19,479.87	1,018.43
Interest & Income Fund				
University.....	1,427.09	38,861.22	39,480.38	807.93
School of Mines.....	663.99	16,306.90	16,392.17	578.72
Agricultural College.....	1,159.33	61,168.26	56,607.07	5,720.52
Mayville Normal.....	686.67	14,079.90	14,043.06	723.51
Valley City Normal.....	994.66	23,479.22	23,157.89	1,315.99
School for Deaf.....	601.67	17,539.97	17,047.22	1,094.42
Hospital for Insane.....	11,784.36	7,661.27	3.43	19,442.20
Soldiers' Home.....	1,060.26	15,812.51	15,872.51	1,000.26
Blind Asylum.....	479.89	12,699.16	12,458.63	720.42
Industrial School.....	537.85	18,288.34	17,609.52	1,216.67
Academy of Science.....	1,410.32	17,924.59	18,604.37	730.54
Capitol Building.....	45,818.15	28,667.21	6,053.67	68,431.69
Reform School.....	6,984.73	17,582.00	12,997.20	11,569.53
Total.....	\$1,013,571.61	\$4,407,564.13	\$4,403,489.04	\$1,017,646.70
*Over Draft				

gotten in planning the building, even to providing space for the smallest piece of apparatus. In inspecting the building the visitor is unable to find a single foot of floor space not well occupied.

The dissecting room and hospital are essentially separate buildings connected with the main structure by enclosing corridors. The interior of both these are built almost entirely of metal and concrete, and therefore, offer perfect sanitary conditions. The dissecting room is so arranged as to admit light from all directions. The end of the corridor reaching to this room is arranged for a killing room, fitted with all the conveniences of a modern slaughter house. The hospital provides room for ten animals, five in single stalls and five in box stalls.

A large amount of the very best and most modern equipment imported from France and Germany has already been installed, and much more will follow. The plant in all its appointments will compare favorably with the best in this country or in Europe.

Look on Page 11 for Awl Premium

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We pay \$1,000,000 a year for the **extra quality** that you get at no extra cost when you buy "Ball-Band" Rubber Boots and Arctics.

Eight Million People have learned **by actual test** that "Ball-Band" Rubber Footwear excels in **service** and **satisfaction**.

From the very first, we have sacrificed **extra profits** in order to **earn** for "Ball-Band" goods the reputation for highest quality ever known in rubber footwear. Now that we have **gained** supremacy, it is vital to us that we **hold** and still further **enhance** it. To cheapen the quality **now** would be nothing short of disastrous.

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Much of it goes into **crude rubber**, which we buy in million dollar lots. Then comes the big cost for **skilled workers in rubber**—men who have **mastered** each process and operation.

Forty acres of floor space, hundreds of machines, vast quantities of high-grade materials, an army of highly trained men—these are the factors that aid us in making "Ball-Band" goods the best that money can buy.

Join the ranks of the 8,000,000 who buy "Ball-Band" because they are best. Some dealers, who also sell other brands, which cost them **less money**, hand out inferior rubber footwear as equal to genuine

"Ball-Band" products. Be sure to look for the "Ball-Band" Trade-mark—the little Red Ball, which we place on every pair. It's for **your protection**. This same Trade-mark will be found on our famous All-Knit Wool Boots and Lumbermen's Socks—the most durable woolen footwear in the world.

GET THEM OF YOUR DEALER

Mishawaka Woolen Manufacturing Company, Mishawaka, Ind.

"The House That Pays Millions For Quality"

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North Dakota Farmer

AND SANITARY HOME

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BUSINESS MANAGEMENT, LISBON, N. D.
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Vol. 11 FEBRUARY, 1910. No. 8

COLORED OLEOMARGARINE

Hoard's Dairyman, in a recent issue, hits the nail squarely on the head when it tells in the following why they want to color oleomargarine:

"Colored oleomargarine is confessedly a counterfeit. It is made in the yellow color of butter for the sole and only purpose of cheating the unsuspecting purchaser and the ultimate consumer. It is sold, not on its own merits as a legitimate article of food and at a fair profit above cost of manufacture, but closely follows the price of butter and by far the largest part of it is actually sold as butter.

"Wisconsin and several other states have laws strictly prohibiting its sale, but what with the cupidity of second and third class grocers who cater to the trade of the poor and take orders from children and over the telephone for delivery, not to mention the unprincipled itinerant venders, it is quite impossible to ferret out even 1 per cent of these violations of law. Congress is without power to prohibit the manufacture and sale of oleomargarine, but it can tax it to a degree that shall make its sale less remunerative to its manufacturers. This it has attempted to do, but what with unfavorable court decisions and the laxity of revenue officers, that law is now of little avail. It is currently reported and believed that while only 5 per cent of the oleo manufactured pays the 10 cents tax, fully 95 per cent of it when sold is in the yellow color of butter.

"It is claimed in opposition to the enactment of the present law that without an artificial substitute that could be

sold as the genuine article the price of butter would soon be practically prohibitive. The answer to this was and still is that when the price of butter reaches 30 cents a pound, colored oleomargarine, after paying the 10 cent tax, can be sold at a good profit and in this way keep the price of butter down."

CHEMICAL PRESERVATIVES IN FOOD

Do the American people want benzoate of soda in their foods and beverages? We believe not and this is the opinion of the National Consumers' League of the United States. Made up of our most intelligent consumers they have clearly expressed themselves in the following language:

"Resolved, That the National Consumers' League respectfully urges upon Congress the necessity of amending the national Pure Food and Drugs Act in the following particulars, viz.: To prohibit absolutely and unqualifiedly the use of benzoate of soda and similar chemical preservatives in the preparation and preservation of foods destined for interstate commerce, for the sake of preventing the utilization of unclean and offensive waste productions, which now, by the use of such preservatives, are branded as foodstuffs and sent thru the channels of commerce."

Read the label and if it says, "preserved with benzoate of soda" then select another brand and the evil will soon be at an end.

MORE ABOUT BAD FOODS.

It is frequently said that adulterated and misbranded food products are not found to any extent upon the market as was the case before the enactment of the National Law.

In a bulletin recently issued by the Food Commissioner for Missouri, we find the following statement:

"A bottle of catsup is shown which was part of 20 gallons condemned by an officer of the Department in Kansas City. It is made up of pumpkin pulp, colored with aniline dye, preserved with benzoate of soda, and sweetened with saccharin."

There does not seem to have been anything much more adulterated than this sample before the enactment of our National Law.

In a recent article, Samuel Hopkins Adams, author of "The Great American Fraud," in discussing, "What Has Become of Our Pure Food Law?" says:

"Today, only three years after its passage, the Statute, which required seventeen years of unremitting effort to place upon the books, is, so far as many important forms of adulteration are con-

cerned, practically an inert machine. It is being destroyed by the old allied forces of fraud and poison."

In discussing the conclusions reached by the Referee Board, he has to say:

"From that mass of technicality, one fact stands out clear and unclouded by any specious shadow of qualification or excuse: that the reasoning which declared benzoate of soda harmless, upon the evidence adduced by expert judges themselves, is as alien to scientific truth as it is abhorrent to ordinary common sense."

In reviewing the mass of data as presented by the Referee Board, he says:

"Summing up, then, we find 14 out of 16 benzoate-fed men affected variously in the period of dotage with marked disorders of stomach, bowels, kidney, temperature, pulse and general condition; rather an arresting record for strong, young men in good training."

How great, grand and enobling is science when manipulated by cheap politics. Will North Dakota swallow the National Law to please food adulterators and their political cohorts.

SAND VETCH FOR NORTH DAKOTA

Question: "How would sand or winter vetch do for North Dakota for forage, and as a nitrogen gathering bacteria plant? The seed catalog speaks highly

GRAND 5-YEAR OFFER, PAGE 20

"GRANT'S
Candies are
PURE."

HONEY Well ripened clover Honey for Sale, guaranteed absolutely pure and of the finest quality. One 30-lb. can 11 1/2c per lb.; 2 or more cans 11c; 12-lb. cans, in full cases of 72 lbs., 11 1/2c per lb. Send for price list. Address

M. V. FACEY, Preston, Fillmore Co., Minn

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WHEAT
—TO—
FARGO MILL CO.
WE PAY DRAFTS.

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WHOLESALE
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Geo. R. Newell & Co.,

WHOLESALE GROCERS,

MINNEAPOLIS,

- - - MINN.

of it. Please answer thru the North Dakota Farmer.

Crary, N. D.

W. R. W.

Answered by Prof. Shepperd

Sand vetch is a close relative to the field pea and has not met with as much favor in this state as the Canadian varieties of field peas. It grows well when it is planted on ground that is well drained and makes an excellent feed for stock, about the equal of red clover

hay. It is worse than peas for lodging and in consequence is giving trouble to the grower when he comes to harvest the crop. It can be sown mixed with oats, as is done with peas, thus holding it up and relieving the difficulty from harvesting the lodged crop. The stems of vetch are somewhat finer than those of field peas and in that particular it is a better hay. It is a nitrogen gatherer and will enrich the land in the same way that field peas will do.

Livestock Department

PROF. W. B. RICHARDS, Editor

PRODUCTION OF CATTLE FOR MARKET

By J. A. Powers, Manager Hellendale Stock Farm, Power, N. D.

(Before Tri-State Grain Growers' Convention)

I was asked to talk on this subject by Professor Richards because he believes we have had some measure of success in the work on our farm in Richland county.

My father bought and opened up the farm about thirty years ago. He purchased pure-bred and high grade short-horn cattle and we have continued with this breed ever since, thru good times and bad. We winter over, in cattle stock, about 250 head. We have always used pure-bred bulls of good size and quality, also we aim to keep quite complete records of labor and feed costs and the results that I will give you in this article are approximately correct.

Our winter care of stock follows closely that of most farmers. We put up about 300 loads of hay which is fed to the cattle only in the barns at night. The labor cost of putting up hay runs from 70 cents to 90 cents per load. We stack in the yards the fodder secured from about 100 acres of corn. This corn, stacked ready for use costs us from \$2.25 to \$2.75 per load. In the day time the cattle run to straw stacks in the yards and are fed some corn fodder on the ground. As a rule we do not aim to keep our grade cattle in more than fair condition thru the winter but try on this style of care to secure a slight gain on the entire bunch of twenty-five to fifty pounds per head. The pure-bred cattle are

tied up and given different feeding. All the grade run loose in barns and sheds and are sorted according to age. Every barn is cleaned and well bedded three times a week. The spring calves are put in one shed and these are fed liberally with hay once a day about four quarts of ground feed and bran. Calves do well on this feed. The late fall and winter calves are not weaned in the fall but are left with their dams and are fed similarly. This year we have about seventy-five calves.

In the spring all the stock is herded in the fields till pastures are good. Our pastures are large and contain about five acres for each head, which assures plenty of grass. We separate the heifers, too young to be bred, from the cows and put them in a separate pasture. The steers are also run in separate pastures. The common practice of letting young heifers run with cows and bulls in one pasture results in their coming in calf at two young an age and impares size in both themselves and calves and should be condemned strongly. We use matured bulls that run with the cows from July 1, to Sept. 1 and as soon as threshing is finished all stock is run together on the fields and meadows and placed nights in new pastures. Of course the bulls are removed when the stock is taken from the pastures in September. Our gains on grass alone from June to October 1 run from 225 pounds to 300 pounds per head. The older steers gaining the most. It might be of interest to know that our colts gain just about as much as the cattle do on grass for similar ages. We figure cost of raising grade cattle in this way to average about \$9 per head a year. You see this follows closely usual practices, unless it is that we may

feed a little more liberally of hay and sort the stock closer.

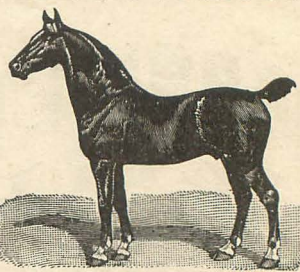
Some Points on Feeding

At this point allow me to digress and give my reasons for this sort of handling and for the marketing described later on. It is safe to say that there is usually the best of reasons for following the usual practices. However, methods in beef cattle raising in North Dakota should vary with local conditions. I shall tell what appears best to us and which we may continue. We can afford to keep our steers till they are at least three and one-half to four years old before marketing, and they ought at this age weigh 1,350 pounds and over. This weight has been grown on cheapest sorts of feed and the principal gains made on grass and has not been obtained by expensive feeds and handling charges that would come if the weight were made at one year earlier on heavier grain feeding. We firmly believe in the grain feeding of the calves and the yearlings that are thin. The additional bone growth and good start secured the first winter will be maintained. I believe grain fed calves carry matured weights more evenly. After the first winter we believe that the gains made from hay, straw and corn fodder are so satisfactory and so cheaply secured that we can afford to feed in this manner two years

OUR AWL OFFERTAKES, PAGE 11

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Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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The Lawrence-Williams Co., Cleveland, O.

Our Premium Awl is Worth a Dozen

more and get the three summers cheap grass gains. This gives us proper weights at three and one-half to four years of age. The same weights may be obtained a year younger by continuous grain feeding. We obtain the weight more cheaply, and I do not think they sell for less money nor lose quality. I do not believe that it pays to grain feed cattle the second or third winter unless the feeding is continued on grass, if the cattle are to be marketed in the fall off of grass. It is my observation that winter grain fed cattle make less grass gains than will cattle nicely wintered otherwise and the excess of their total weight is so slight in the fall that the winter feeding will have been done at a loss. While in some parts of the state you can more profitably raise and market "feeding" steers, men in other parts of the state can better afford to feed continuously and market beef steers at a year younger than we are doing. There are, however, general rules that apply in all cattle marketing operations everywhere and these are:

First: That it never pays to sell feeding steers at a less weight than 1,050 to 1,100 pounds, for this is the weight that brings the highest price for that class of stock. The average steer at two past here weighs 350 to 950 pounds and costs \$27 to \$30 to produce and will sell for about the same amount. Selling at this age and weight is so common a practice that I am of the opinion that most all of the losses and discouragements of the business come from just this practice. Where do these steers go? The Illinois and the Iowa feeder buys them, winters them and the next season feeds and finishes them off on higher priced hay, grain and pasturage than you have here. If 200 pounds were added to this 900 pound steer, and which could be secured in seventy-five days, fifty per cent will be added to its value. In case this steer would be kept over one more year to be marketed as three year old beef steer it should not be sold at a less weight than 1,300 pounds and with some finish. Here again we would be throwing away a chance at most excellent profits that some two months with a little additional feeding, and 100 or 200 pounds more weight on them. But to just what extent we should try to finish them I would not be able to say, only I do know that it pays to try to finish them somewhat, and every 100 pounds over 1,250 is well paid for and steers run into big money that weigh 1,400 pounds or over.

My second general rule would be

ST. PAUL UNION STOCKYARDS COMPANY

ST. PAUL UNION STOCKYARDS REPORT FOR JANUARY

Receipts						
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P....	354	40	904	9	28	29
C. G. W.....	84	106	4487	1630	93	102
C. M. & St. P.	2264	360	13376	3116	183	309
M. & St. L.....	875	136	9069	1490	2	173
C. St. P. M.&O	1888	226	14379	1879	.....	276
C. B. & Q.....	105	8	1950	1227	.....	37
M.St.P.&S.S.M.	2421	864	5654	1207	.....	176
Gt. Nor.....	4434	1559	13474	5539	30	400
Nor. Pac.....	3490	283	2143	45751	3	363
St. P. B. & T..	.....	.....	.....	.....	.....	.....
Driven In.....	555	39	425	805	.....	.....
Total 1910.....	16970	3621	65861	62653	339	1865
Total, 1909.....	23095	3425	121402	35924	280	2419
Increase.....	.....	196	.....	26729	59	.....
Decrease.....	6125	.....	55541	.....	.....	554
Average Wts..	916	185	212	87	.....	.....
Shipments						
C. R. I. & P....	165	.....	.....	.....	.....	6
C. G. W.....	1512	40	4750	2733	7	106
C. M. & St. P.	1958	184	213	7720	1	119
M. & St. L.....	148	7	.....	.....	.....	7
C. St. P. M. & O	597	107	254	2834	4	38
C. B. & Q.....	2350	20	7181	29037	21	283
M.St.P.&S.S.M	293	22	73	5357	61	41
Gt. Nor.....	118	17	91	117	28	9
Nor. Pac.....	540	163	87	446	81	31
St. P. B. & T..	.....	.....	.....	.....	.....	.....
Driven Out....	743	200	162	62	283	.....
Total, 1910.....	8424	760	12811	48306	486	640
Total, 1909.....	14110	677	31768	27415	277	825
Increase.....	.....	83	.....	20891	209	.....
Decrease.....	5686	.....	18957	.....	.....	185
Origin of Livestock Received						
States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota.....	9957	3103	48068	10065	169	1098
Wisconsin.....	1573	386	7151	2306	79	174
Iowa.....	.....	.....	.....	.....	78	6
Far South.....	.....	.....	.....	.....	10	1
So. Dakota....	1295	56	6267	1929	.....	152
No. Dakota....	2354	52	4375	2795	.....	162
Mnotana.....	1718	22	.....	35373	.....	228
Far West.....	25	.....	.....	10185	.....	41
Manitoba & N.W.T.....	.....	.....	.....	.....	.....	.....
Fra East.....	.....	.....	.....	.....	.....	.....
Returned.....	48	2	.....	.....	3	3
Totals.....	16970	3621	65861	62653	339	1865
Totals 1909	23095	3425	121402	35924	280	2419
Disposition of Livestock						
no. St. Paul P'k'rs	7618	3028	52880	11671	.....	.....
City&St. Butch.	1629	329	594	635	.....	60
Outside Packers	226	73	12082	2655	.....	137
Minnesota.....	1511	291	.....	655	346	51
Wisconsin.....	242	8	.....	200	3	11
Iowa.....	484	7	.....	131	7	19
Nebraska.....	117	.....	.....	.....	.....	3
Kans. & Missouri	24	.....	.....	.....	.....	1
So. Dakota....	74	.....	.....	.....	.....	2
No. Dakota....	141	3	.....	.....	30	8
Mont. & West	22	2	.....	.....	.....	1
Far South.....	65	.....	.....	.....	.....	2

Fountain Pens or Out-of-date Maps!

Manitoba & N.W.T.				20	1
Mich. & E. Can				57	3
Chicago.....	2669	31	135	44030	298
Ills. (ex Chicago)	785	14			27
Eastern Points	387				13
Returned.....	48	2		3	3
Totals 1910	8424	760	12811	48306	486
Totals 1909	14110	677	31768	27415	277
					825

AT THE EXPERIMENT STATION



Willow Hedges are Becoming Popular.



Canada Field Peas Are Nitrate Makers.

that it is absolutely essential to success, or any profit whatever, that you use the best beef bred cattle obtainable. It is my belief that 90 per cent of the losses are due to the neglect of these two practices of marketing at too young an age and too light weights and the use of poorly bred stock.

We have had no particular success with winter feeding. However, if it is profitably done in Illinois or Iowa I see no reason why it may not be

done in the eastern parts of the state. If our weather is colder I doubt if the winters are harder on stock than is the damper weather of those states. We need protection from the winds and this is absolutely essential. The only advantages that they have, it seems to me, are, that they are closer to markets and have a longer grazing season. This latter condition we could help if we could use brome grass, blue grass and white clover in our tame grass

pastures. We have, however, the advantages of cheaper pasturage, cheaper corn and grains and hay.

Instance of Winter Feeding

Let me instance what your neighbors are doing in the way of winter feeding and fitting of individual animals that are sent to the best and highest class stock show on earth, the International that is held at Chicago every December. Mr. Fletcher won a championship with his white bull, bred by himself and sired by a North Dakota bred bull. The agricultural college won a championship with a short-horn steer that had five generations of North Dakota breeding back of it. Mr. Canfield, a few miles east of here, bred and fed the grand champion barrow at the same show, which is the highest honor of the year in hog breeding circles. A few miles farther east of him Mr. N. P. Clark breeds cattle good enough to win championships in both aged and young herds of short-horn this year. Many of you have seen Mr. Wallace Brown's cattle that are in my opinion as good as are bred anywhere and with which he is a constant winner at the largest shows. Mr. McKerrow, who follows me on the program today, can tell you, if he will, just how good sheep we can raise here as he has judged and given them championships at St. Paul two years in succession. I have seen really finished cattle fed all winter practically out of doors by Professor Richards of the Agricultural College that were high class and made a profit, tho sold very cheap. And 300 miles north of here I have seen some of the best cattle bred, that were remarkable for scale and quality. I give these instances of what is done with individual cattle, hogs and sheep, to instance that cold weather alone has no bearing on the feeding possibilities. Cattle for market purposes in car lots could be fed equally well provided we believed it would give us profits possible to be derived from feeding on grass and marketing in the fall.

We prefer to sell cattle this way for I know just what may be expected from this style and the gains are certain and uniform one year with another, and less risk attaches to the business. I believe one could finish cattle, at a very good profit if three-year-old steers, well wintered on corn fodder, hay and straw were put into a good tame grass pasture and grain fed till fall. If one does not care to do this, I will tell you our experience in short feeding this fall that was very satisfactory to us and which we have done before several times with profits. Our aim was not to finish, but to get greatest weights, and net profits.

Northern Minnesota and North Dakota Grown SEED CORN---CLOVER---GRASS SEED AND SEED GRAIN

N. J. OLSEN CO.,

Moorehead, Minn.

An Example From Helendale Farm

On Sept. 8 we brought up forty steers from pastures which averaged 1,040 pounds and were thirty to forty months old. They were put into a new pasture containing considerable tame grass and were first fed fodder corn with ripe corn in it and later husked corn in troughs twice a day. At the end of thirty days they had gained 100 pounds each and we determined to separate them, the heaviest fifteen head to be entered in the grain fed class at South St. Paul show and twenty of the others in the car lot feeder class. The fifteen heavy ones weighed 1,245 pounds and were placed in a hog lot and fed all they would eat of ground barley, oats, bran and oil cake, fed once a day, and corn fed twice a day, with plenty of good hay. These steers fed well and gained consistently and were weighed every two weeks. The steers left in the pastures weighed 1,115 pounds, were fed twice a day all they would eat of husked corn. The gain of both lots was practically the same and they made 3.6 pounds each per day for the period of seventy-four days feeding. This may sound large to some of you, but we have made similar gains before. It was made for a short period only, besides the steers were good ones to commence with. When shipped from the farm the fed steers weighed 1,386 pounds and the feeders 1,246 pounds.

You will be interested in the financial report of these steers:

Sept. 8th we estimated the steers to be worth 4 cents per pound on the farm and were valued at	\$1,456
Market value of feed consumed, 7 loads corn-fodder, 440 bushels corn, 90 bushels ground feed, bran, etc.....	324
Part of labor, charge of barn man	74
Total charges against steers.....	\$1,854
Net receipts of these steers sold on the St. Paul market at 5½ cents for the feeders and 6¼ cents for the fed steers was.....	\$2,374

Shows a net gain of 36 per cent and..... \$ 520

This was made in seventy-five days. The corn was charged at 50 cents per bushels but it cost us to raise it only 21 cents. Other feeds were charged at market prices. Hogs followed these steers and made good gains.

Takes Inventory on Feb. 1

While on the subject of profits in the year I will say that on Feb. 1 of each year I take an inventory of livestock, putting conservative values on each head, or on cattle, value them by age and condition and market values. Last year our grade cattle numbered 202 head valued at \$4,740. Our total

cash receipts from the grades since then has been just \$4,800, and we now have on hand 201 head, on which, however, I have not yet placed values.

The total receipts from all livestock last year was \$6,200. Our inventory values will slightly exceed last year's I believe. The total labor bill for the year was \$3,400, and we cropped about 600 acres and did considerable repair and unusual work.

What I have said to you is not new. I give it to impress on your minds the fact that it is a profitable business, and very pleasant one. Also I wish to emphasize especially some small points, which tho often written of, are frequently overlooked and their importance not duly considered.

We have not always done so well and may not do so another year. The future looks good to us, however. It is conceded by all livestock authorities that we are facing a cattle shortage that must result in high beef values and that this condition must prevail for a number of years and the full effect is not yet apparent. Present values are not too high and farmers are entitled to receive present prices for all meat products, even tho it appears to work a hardship on consumers. The fact is, that we will never again see values as low as they have been, and consumers were misled in their ideas of correct values or proper profits they should allow to the producer.

CARE OF HORSES IN WINTER

I. E. Newsom, Colorado Agricultural College, Fort Collins

A great many of the troubles of the horse come when the owner thinks he is treating him the best in winter when there is little work and the horse is turned out to pasture or to an alfalfa stack. There are a number of points to keep in mind when disposing of the horse for the winter:

First of these is the condition of his teeth. Remember, if he has been living largely on chop feed, or other grain that requires little mastication, that his teeth may not be in condition to handle the roughage of the pasture or the poor quality of hay which is usually fed to horses that are not working. He may be parrot-mouthed and not able to bite off the grass.

The teeth should by all means be examined by a veterinarian, if the owner is incapable. Rough feed must be well chewed before it can be properly digested.

A friend of mine, just before turning his horse out to pasture for the winter, had him newly shod. There



THE MADE-TO-ORDER CREAM SEPARATOR

The dairy farmer who buys a 1910 De Laval Cream Separator gets a machine that is really made especially to order for him.

First: Because the 1910 De Laval is designed and constructed, without sacrificing any vital feature, to meet the comments and criticisms gathered from over 1,100,000 dairy farmers to whom De Laval machines have already been sold.

Second: Because if he should offer to pay ten times the ordinary price he couldn't secure a closer skimming, a greater money, time and labor saving, a more durable, a more convenient or an easier running separator than the 1910 De Laval.

Lastly: Because every feature of the 1910 De Laval machine from top to bottom is just as the best mechanical as well as the most practical engineering demands that it should be.

The De Laval is the made-to-order cream separator without the made-to-order price. The De Laval catalogue tells the whole story. Ask for a copy.

The De Laval Separator Co.

165-167 BROADWAY NEW YORK	173-177 WILLIAM ST. MONTREAL
42 E. MADISON ST. CHICAGO	14 & 16 PRINCESS ST. WINNIPEG
DRUM & SACRAMENTO STS. SAN FRANCISCO	1018 WESTERN AVE. SEATTLE

are a number of reasons why this is bad practice, not the least of which is that the other horses in the pasture may suffer from calk wounds. The more important reason, however, is that as the hoof grows out, the shoe does not allow of expansion, and the result is a contracted hoof with the usual corns and lameness following. Six weeks should be the limit for a set of shoes to remain on. I can see

no excuse for a horse being shod while at pasture.

The hay usually given to horses to supplement the pasture is of very poor quality, either woody or moldy, and this results in considerable loss. In order to digest such feed, a horse needs the very best of conditions; such as excellent teeth and plenty of water. It is a well-known fact that horses do not drink a sufficient amount of water in cold weather and often take little exercise, thus leading to a torpidity of the bowels, resulting in impaction colic. With a combination of bad teeth, woody, dry feed, cold water, and little exercise, the wonder is that impaction cases are not more frequent. It seems to be well established among veterinarians in the alfalfa regions that fifty per cent of these cases are fatal and they are altogether too common in winter.

For the person who feeds well, keeps a fat horse and has irregular work, azoturia is to be dreaded. The history of a case of azoturia is always the same—fat horse, rested two or three days, heavily fed, hitched up, horse free to go, in a mile or two broken out in a sweat, stiff behind, may have gone down, owing to whether horse was stopped when first symptoms were shown or was pushed on. To avoid this, either give daily exercise or cut down the feed when idle.

HINTS FOR STOCK OWNERS

The ram should not run with the ewes during the winter.

Never breed a ewe lamb until past its first birthday.

Breeding too young will stunt the young ewe, and the loss in the long run will be more than the gain.

Pigs are quick money, for in six or seven months they are ready for market, at a big profit if well fed and cared for.

If sows are to farrow in February or March, put them in warm, well-ventilated quarters, where they can exercise.

If pigs show an unthrifty condition something is wrong in the feed or management. Find out the trouble and remedy it, or you will lose money.

Cold water never should be given the new milk cow. It may bring on a chill and cause milk-fever. Warm it a little for a couple of days. That will help to avoid the danger.

Push the calf right along. The first year of a calf's life will be the making of it. Away with the sore-eyed, gaunt, frowzy-haired little runts I see here and there, all weaned too soon. Let them have milk till too big to drink it, before you cut it off entirely.

1910 OFFER

For several years we have been searching for a magazine of national reputation with which we might combine, and in which we might have implicit faith as to its editorial policy and advertising patronage. The Farm Journal, of Philadelphia, Pa., is just such a publication. Its circulation is over 600,000; its class of advertising is beyond criticism. As a general farm paper, it has no superior in the nation. No farmer in North Dakota can afford to disregard our special offer of five years subscription to both the North Dakota Farmer and the Farm Journal, for only \$2.00. Subscribe yourself then pass the word along to your neighbor.

NORTH DAKOTA FARMER FIVE YEARS
FARM JOURNAL FIVE YEARS

BOTH FOR \$2.00

Why Bother to Renew Every Year?

Free Samples on Request. North Dakota Farmer, Lisbon, N. D.

CENTRE-LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

THE ENVILLA STOCK FARM

COGSWELL, NORTH DAKOTA

SHETLAND PONIES. All colors, ages and sizes.

REGISTERED ANGUS CATTLE. Most popular families.

HEAVY DRAFT STALLIONS AND MARES. TWO SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS.

PURE BRED POULTRY.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.

LISBON TANNERY

Hides, Furs and Robes

We tan Horse and Cattle Hides. Skins of all fur animals for Robes and Coats. Oak Harness and Lace Leather. Robes are our specialty. No Complaints. Skilled Labor. Twenty-five years' experience. All work guaranteed. Pay highest market price for Hides and Skins. We keep a line of Harness Leather and Robes for sale. We pay the freight on Green Hides for Robes and Leather. Send for price list and shipping tags.

Lisbon, N. D.

OTTO JENSON, Proprietor.

No man is fitted to train horses who is not thoroly sympathetic and brimful of horse-sense.

Every man who raises one colt or many should realize the great importance of early education.

This should begin when the colt is only a few days old.

If tied at first with a strong, well-fitted halter that will withstand all trials to break, a string will hold him ever after.

Never omit the kicking strap when the colt is first hitched up.

The best way to ruin a horse is to saw on his bit when he gets a little out of line. There may be other methods, but that's the best one we can think of just now.—
From February Farm Journal.

GRAND 5-YEAR OFFER, PAGE 20

CLASSIFIED ADS.

HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn.

MEADOWBROOK STOCK FARM. Clydesdales and Shetland Ponies, imported and home bred. Prices reasonable and terms to suit. Write or come and see me. **GEORGE LANG**, Mapleton, Minn.

CATTLE

North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 17722—pure Scotch. **John Donnelly**, Grafton, N. D.

REGISTERED RED POLLED CATTLE
Young Stock of Both Sexes For Sale.
C. G. FAIT & SON, Monango, N. D.

FOR SALE: A fine purebred registered Holstein-Friesian bull one and one half year old, of the famous DeKol and Pietertje families, the best dairy breed in the world.

F. J. STEIDL,
Wheaton, Minn.

FOR SALE

GALLOWAY CATTLE
J. W. & F. T. PETERSON, Litchfield, Minn

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. **GEO. N. SMITH**,
Amenia, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds Fancy Poultry, Pet Stock and Ferrets.

FOR SALE: Two thorobred Spanish Jacks raised in Minnesota. Four registered short horn Bulls. **T. K. TOBIASON**, Kempton, N. D.

FAIRVIEW STOCK FARM. Breeder of Short Horn Cattle, Mammoth Bronze Turkeys and B. P. Rock Chickens. Young Stock for Sale.
F. R. HAMMOND, Prop., Bismarck, N. D.

DON'T FORGET

We have Angus Cattle, Oxford Down Sheep, White Holland Turkeys, White Phymouth Rocks and Pekin Ducks for Sale.

All stock full blood and registered.

WILLOBANK FARM

Eastgate Bros., Larimore, N. D.



**KENDALL'S
SPAVIN
CURE**

"ONLY SURE REMEDY"
Gadsden, Ala., Apr. 26, 1909.
Dr. B. J. Kendall Co.
Gentlemen: Please send me copy of your TREATISE. I have been using your Spavin Cure for 20 years, and find it is the only sure remedy. It is the best liniment I can get for horse and man.
Yours truly, W. J. McBee.
That tells the whole story, and it is the experience that hundreds of thousands have had in the past 40 years, and it's the experience you will have—"It is the only sure remedy!"
For Spavin, Ringbone, Curb, Splint, Swellings and All Lameness
Sold By Druggists—\$1.00 a Bottle, 6 bottles for \$5.00. Keep it on hand always. Be ready for the emergency. Kendall's stops the pain, starts the circulation, penetrates and removes the cause of the disorders. Ask for a free copy of "A Treatise on the Horse." If not at dealers write to—**DR. B. J. KENDALL CO., Encsburg Falls, Vt.**

J. W. Wampler

Bordulac, N. D.

EXPERIENCED AUCTIONEER

Live Stock and Farm Sales

Familiar with Pedigrees. Prices reasonable and satisfaction guaranteed. Correspondence solicited. References given.

Auction Sale

The Envilla Stock Farm will hold its first sale of 1910 next Friday, the 18th of February, at Cogswell. Mr. White is a veteran breeder of North Dakota and the Registered Horses, Shetlands, Percherons, and Clydesdale Mares, and Registered Jacks—over 80 in all—ought to draw a large crowd of buyers.

Edgewood Farm

Breeders of Jersey Cattle; Poland-China Hogs; Mammoth Bronze Turkeys.

Some choice bull calves for sale; 100 turkeys to select from,

from prize winning stock.

EDGEWOOD FARM, R. 2,

Fargo, N. D.

Poultry Department

Prof. O. W. Dynes, Agricultural College

By Mrs. B. F. Wilcoxon, Hillsdale, Wyo.

The poultry business is one of the biggest little businesses you ever saw and is worthy the consideration of full grown men and women of mature minds and good judgment.

Several years ago a lady wrote me asking for advice. She was left a widow with several children to support. She had her own home with several acres of ground. She was wondering whether there was anything in poultry and whether she could make a living at it.

She bought a pen of twenty-four Wyandottes of the best laying strain. For six months, from January 1st to July 1st they laid 3045 eggs; some of these were sold for incubation, others at market price. Eggs, broilers, young chicks and breeding stock were sold to the amount of \$121.33, feed costing \$22.27. Total gain of \$99.06. She began by hatching August chicks, which proved wonders.

She always kept wheat bran before them all; the hard grain that was fed to them was scattered in the litter or in the ground to keep them busy. She did not feed too much hard food until the chicks were old enough to properly digest it. For the first few feeds she fed very dry bread crumbs rolled fine and mixed with hard-boiled eggs.

These August chicks were provided with plenty of shade and green stuff from the garden. Their coops are scrubbed with good kerosene emulsion, which does away with lice and mites. A great many visitors made the remarks, "You have just the place for raising chickens any way."

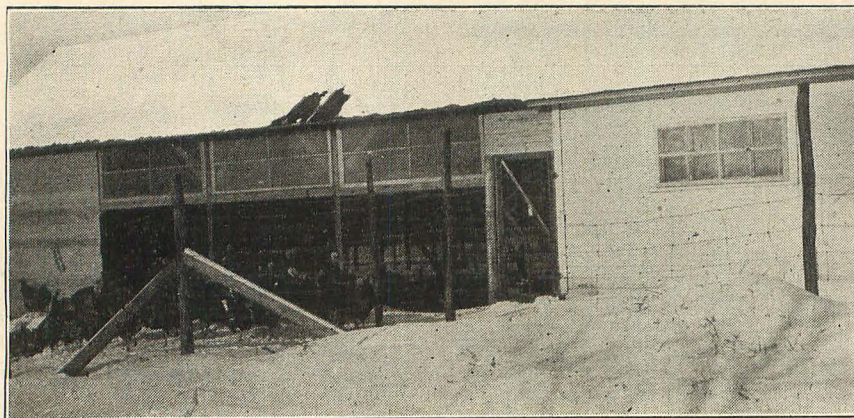
But, dear readers, remember that all these advantages count for naught without proper care and management of the flock. Without work there is no success in the poultry business, no matter how good the stock, surroundings and buildings are.

This lady followed my advice to the letter; she made hens pay; she started in slow; began on a small scale and kept on increasing the plant because the work suited her; she was adapted to poultry raising. She had the motherly instinct that is needed in caring for chicks; she was not afraid of a little extra work. She kept accurate accounts. Today this woman has 1000 laying hens.

To find out whether poultry pays or not there must be a strict account kept of expenses and income, so that one can know at any time just where he stands. If you only figure up once in a while you do not know whether the business is being run at a loss or a profit. This is the rock on which the hopes of thousands of farmers are wrecked. This loose meth-

od of doing business is the cause of a great many failures in the poultry business.

For a great number of years poultrymen have been endeavoring to locate the cause for the large losses of young chickens, particularly of those hatched artificially. I have visited poultry farms where chickens were hatched both naturally and artificially. Oftentimes the chickens hatched naturally were more thrifty and vigorous. I have seen choice chickens hatched artificially. I have also seen chickens with hens that were far from first-class. On a great many of these farms where there were from 1000 to 2000 hatched yearly the death rate has been so great as to render the business unprofitable. I find that



Home of Mammoth Bronze Turkeys on Edgewood Farm, Fargo, N. D.

the death rate amongst the chickens where there were only about 200 hatched artificially not very great.

The questions that come to our minds are: Are artificial methods to blame? If so, wherein do they differ from the hen method? Is this heavy death rate due to inferior breeding stock? Are the methods of feeding and brooding the cause?

These questions have to be considered seriously. So note carefully the methods of selecting the eggs as well as the manner of brooding and feeding the chickens.

By keeping a monthly account one will soon be able to see where the leak is and can remedy it before it does much damage. I know of several friends of this lady's who, thinking they could accomplish the same results with poultry, rushed into the business, expecting to realize a small fortune. The result was a failure.

While looking over the poultry outlook in southern Colorado and Northern Mexico a friend was complaining about the high price of eggs in the mining districts. They often went as high as 75 cents per dozen. I said to her, "Why don't you start an egg farm yourself? After my visit was over I thought no

more about the remark. I received a letter from her a short time ago stating that she raised 250 chickens after culling 200 fine pullets left. The December and January eggs from these were bringing her 60 cents per dozen. She is a bright, energetic woman that could make a success where many would fail. She never had any previous experience—just used good common sense. One woman made \$90 raising July and August chicks and after selling had 125 left. These she wanted to keep for layers the following summer. If you have made a failure out of your early hatches, don't give up, try the late summer and early fall hatches.

May and June are splendid months in which to hatch chicks. Many have

better success than with those hatched earlier.

If one hatches in February he must have a good, warm place where the temperature does not vary much. One year in my earlier experience with poultry I had 500 hatched the first of February. These chicks were placed in a room (in their brooders) which had a stove in it. During the day time the chicks were let out of their brooders and allowed to run around the room, on the floor of which was scattered fine litter from the barn loft floor and their feed was scattered in this. The temperature was the same day and night and I believe it is this variation of temperature that kill thousands of chicks every year and I have come to the conclusion that it is from no other cause. Out of the five hundred I only lost three. I think that they died from over eating.

I notice that when the chicks are hatched they are very much alike in appearance. The trouble generally begins about the fifth day. Some of the chicks have a white discharge from the vent. They are not very active. Some seem cold and in great pain; others have intense thirst. The chicks die in large numbers between the fifth and tenth day or some will drop off gradually until at

BUY THE BEST Metal Covered **Ironclad** TRADE MARK

125-Egg INCUBATOR and BROODER Both For

Absolutely fire-proof, weather-proof, rat-proof. Hot water, double walls, double glass doors, copper tanks, self-regulating, high grade lumber. Only Brooder "Ironclad" all over. For indoor or outdoor use.

1250c Freight Paid

Sold on "Ironclad" guarantee. Covered with Galvanized Iron. Don't buy—get our catalog first.

American Brooder Co., Box 32, Racine, Wis.

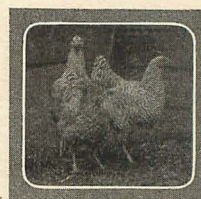
BARRED ROCKS

Choice Stock and Fair Treatment.

ROBERT B. REED

Box 2.

Amenia, N. D.



Plymouth Rock Poultry. Line bred from nation's greatest prize winners. Eggs at \$2.00 per setting. A few choice cockerels for sale at \$5.00 each.

H. C. Harty,
Bottineau, N. Dak.

Baby Chicks, 8 Cents Each. Shipped anywhere. Safe arrival guaranteed. Eggs for Hatching \$4.00 per 100.

Culver Poultry Farm, 1020 Reed St., Benson, Nebr

Silver Wyandotte Eggs, from Fargo 1, 2 Ribbon birds, \$3.00 per 13. From 300 hen flock, \$3.50 per 100 eggs. Baby chicks from flock, 10 cents each.

WYANDOTTE FARM

Woods, N. Dak.

BIRCH-LAWN POULTRY FARM

Alexandria, Minn. R. R. S. C. W., R. C. W., S. C. B. Leghorns from good laying strains. Eggs, \$1 per 15. Toulouse Geese eggs, 30 cents each. Also Duroc Jersey Swine. Male Fowl for sale, all range stock.

PARTRIDGE WYANDOTTES

Hardi-breds Birds from the Hadaway flock direct. Blocky, well marked and of trap-nested, aristocratic ancestry. Eggs: \$3 per 15. Cash with order. GEORGE J. CHILDS, - Casselton, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns Hillsboro, - North Dakota

EGGS for hatching from 26 leading varieties. Bronze and W. Holland Turkeys, Pekin ducks and chickens. Catalog free. L. GULDEN, OSAKIS, MINN.

MAMMOTH BRONZE TURKEYS

I have a few very fine toms for sale yet.

JOHN F. SIMON, Oberon, N. D.

MAMMOTH BRONZE TURKEYS

from winning stock EDGEWOOD FARM, R. F. D. 2, Fargo, N. D.

Make Your Hens Lay More Eggs

I have a method that will make your hens lay every day; it never fails. Write for it,

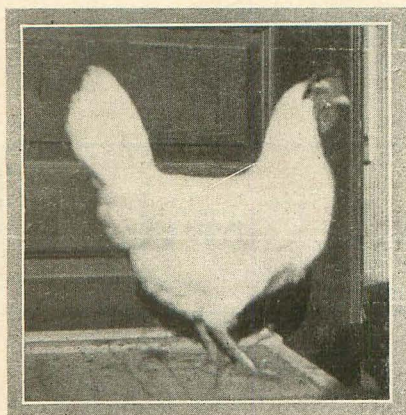
MRS. B. F. WILCOXON,
Hillsdale, Wyo., Dept. 5

the end of six weeks very few of the hatch will be felt.

This is one of the discouraging things in the chicken business. If a post-mortem were held you would find the lungs diseased. The yolk is hard and cheesy. I always have the incubator perfectly clean by disinfection. Don't let the heat in the incubator run too high or too low. The little chicks should be fed in the litter so they can exercise; give them green food, such as lettuce or sprouted grain. When the chicks are three weeks old I feed cracked wheat.

I find that the proper heat is of the greatest importance. Too much heat will injure the chickens and so will too much cold. It is not necessary that the thermometer be constantly watched in the brooder. Experienced brooder managers aim to keep a good strong heat under the hover.

Regularity establishes best health and habits.



A winning S. C. W. Leghorn owned by Hausmann Poultry Farm, Hillsboro, N. D.

A GOOD TIME TO BUY

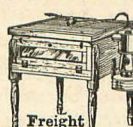
Just now there are many breeders who are desirous of disposing of some of their stock. They are attempting to cull out and reserve the choicest for their next year's work, and are willing and forced to sell some of their fowls. The cheapest mode is to buy a trio or two of fowls now, from a reliable dealer, and save them for the breeders. Prices are generally low in the fall for fowls that are not laying, and when the spring comes the purchaser will have on hand his material for work. It also gives the buyer an opportunity to study the habits and care of those particular fowls and to be sure that they are perfect and healthy. A trio of fowls should lay three to four hundred eggs during the year, and a

IF INTERESTED IN

BEES, POULTRY OR DAIRY

You should read MODERN FARMER Eldon, Mo.

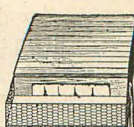
10 Months For Only 10 Cents



125 Egg Incubator and Brooder

Why pay more than our price? If ordered together we send both machines for \$10.00, — freight paid east of Rockies. Hot water, double walls, dead-air space between, double glass doors, copper tanks and boilers, self-regulating. Nursery underneath the egg-tray. Both Incubator and Brooder shipped complete, with thermometers, lamps, egg-testers—all ready to use when you receive them. All machines guaranteed. Incubators are finished in natural colors showing the high grade lumber used—no paint to cover inferior material. If you will compare our machines with others offered at anywhere near our price, we will feel sure of your order. Don't buy until you do this—you'll save money. It pays to investigate the "Wisconsin" before you buy. Send for the free catalog today, or send in your order and save time.

WISCONSIN INCUBATOR CO., Box 67, Racine, Wis.



NOW IS THE TIME

Our Varieties

White Plymouth Rocks,
Caneday's.

Barred Plymouth Rocks,
Bradley's, Aristocrats &
Ringlets.

Buff Plymouth Rocks,
Golden Nuggets.

White Wyandottes,
Fishel's and Keeler's

Buff Wyandottes,
Hess.

Silver Laced Wyandottes,
Flickertails.

Partridge Wyandottes,
Hadaway's.

Columbian Wyandottes,
Tompkin's.

R. C. R. I. Reds,
DeGraft's.

Black Langshans,
Crystals.

Buff Leghorns,
Pure Gold.

Buff Cochins,
Blue Ribbons.

Buff Cochin Bantams.

When you are thinking about getting that new cockerel or those eggs so that you may add new blood to your flock. We have both and they are good ones too.

Have you seen our record at the North Dakota State Poultry Show at Fargo last month?

1st. More birds from Casselton at this show than from any other place on the map; Fargo included.

2nd. Over 20 Blue ribbons and almost as many Red ribbons and about 50 ribbons in all.

This ought to satisfy you that we have the kind of birds you want; **PRIZE WINNERS.**

Write and tell us what you want and we will give you prices that will sell the goods.

Casselton Poultry Association

CASSELTON, NORTH DAKOTA



Getting Eggs In Winter

Is Getting Money

Those who get eggs then make money fast. If you don't get them you have missed some point that might not have cost you a cent but would make you dollars if you knew it. We have arranged to furnish our readers the **secrets of the most successful egg producers**, men who make money, and an illustrated description of how it is done on one of

America's Most Profitable Egg Farms

Also a year's subscription to Poultry Herald, an illustrated, monthly paper devoted entirely to "Successful Poultry Keeping." It is always full of practical, seasonable information that poultry keepers need and every issue has Turkey Dept., Ducks and Geese Dept., Question Dept. (where questions are answered free,) Disease Dept., etc. Regular price 50 cents a year

To Help You Make Poultry Pay

We have made arrangements to give you these **secrets**, also Poultry Herald one year and this paper for only a few cents more than the regular price of this paper alone. Don't delay: begin now and get eggs when the price is highest.

Our Offer: N. D. FARMER and Poultry Herald 60c

"GETTING EGGS IN WINTER" absolutely free with this offer.



year's time will be gained compared to buying eggs in the spring. The yards of breeders are pretty full just now and many of them will be glad to thin out the surplus pretty cheap. Be sure, however, that only good fowls are purchased, and not deformed, thin, scrawny, sickly birds are imposed on you. A reliable dealer will serve you properly.—A Lewiston Journal.

Missouri Farms

Are you looking for a farm in Central Missouri? I have farms in wheat, corn and fruit belts for sale or exchange. If you are interested, write for list and full particulars. If you have something to trade, send description and tell me what you want.

Write J. S. LUMPKIN, Eldon, Mo.

AMONG OUR ADVERTISERS.

Used Successfully for 25 Years on Sweeny, Windgalls, Etc.

I have used Gombault's Caustic Balsam for sweeny, wind galls and caloused scars resulting from wire cuts and collar sores, with very best results. I have used it for the past 25 years and it always gave entire satisfaction.—
JESS W. HARPER, Glenullin, N. Dak.

SQUARE DEALING BUILDS BUSINESS

The manufacture of Rubber and Woolen Foot-Wear has made tremendous strides in late years. Their great economy, comfort and serviceability have made them a necessity in both town and country.

An excellent illustration of what one company has done in this field is that of the Mishawaka Woolen Mfg. Co., of Mishawaka, Ind. (not in the trust). From their small beginning in 1868 they have grown so fast, that today they are the largest manufacturers of rubber and woolen foot-wear in the world. Their plant covers 40 acres of floor space. They have always been noted for the quality of material and workmanship they put into their foot-wear and any one buying Rubber or Woolen Foot-Wear will do well to look for the identification mark they put on each article.

The trade mark of the Mishawaka Woolen Mfg. Co., is a red ball. Their trade name is "Ball Band" which is printed over the upper side of the ball as shown in the illustration. On their arctics or woolen boots, the trade mark is easily seen on the right side of the boot near the top. On their rubber boots it is shown at the top of the front side. The red ball is always noticeable. When ever you buy arctics, wool or rubber boots look for this mark. It always stands for quality and longest wear. The Mishawaka Woolen Mfg. Co., have sacrificed a million dollars in profit to give good, old fashioned, honest-made goods—the kind they are proud to mark with their name and brand.

It always pays to buy the best for they last longer, give greater satisfaction, and are the most economical in the long run. Ask your dealer for "Ball-Band."

Every moment you save on the farm is money saved. It's money in your pocket to do your plowing quicker, easier and better—to do it just at the right time. You should investigate the Reeves way of plowing. The Reeves Flexible Frame Steam Lift Gang Plow is just as useful on small farms as on a large ranch. It is made in sizes for every

need and for use with any traction engine. Other farmers have increased their incomes by using the Reeves and you can do the same. Learn all about the new way of plowing. Write to Reeves & Co., 104 Fifth Ave., Columbus, Ind., and have them send you a copy of their beautifully illustrated catalog. It contains a whole lot of interesting information for farmers and the book will be sent you free.

THE FARMER HIS OWN BLACKSMITH AND WAGON MAKER

"Standard Blacksmithing, Horseshoeing and Wagon Making," by J. G. Holmstrom, author of "Modern Blacksmithing," is a rational treatise on horseshoeing and the anatomy of the foot of the horse, suited to the demand of horseraisers, veterinarians, farriers and the amateur horseshoer.

Among the many interesting subjects treated upon, are the elementary pages

devoted to placing of anvil, correct and incorrect methods of sledge swinging, the use of blowers, the draft forge, the forge for heavy work, method of pointing a rod, various methods of welding including the butt-weld, jump-weld, T-weld and showing the correct and incorrect methods.

The detail of making tools and their use is covered in a very interesting and thoro manner.

The subject of horseshoeing is covered fully, including the anatomy of foot, the various kinds of shoes used for different purposes, how to fit, the use of side-weight, methods of preventing interfering, and cross-firing, how to test a hoof, diseases and how treated, and many other interesting as well as instructive details, which are of particular interest to the farmer.

This book is published by the Webb Publishing Company, St. Paul, Minn., and can be furnished at \$1.00 per copy. Contains 212 pages; is profusely illustrated; bound in neat cloth cover. Copies can be procured from this office at publisher's price.

School and Home

LESSONS IN ELEMENTARY AGRICULTURE

By G. W. Randlett, N. D., Agri. Col.

The Farm Dairy

The composition of milk differs greatly owing to different causes. Most effective among these are individuality of cows, breeds, and time in lactation period. One cow in a herd may yield very rich milk, while another equally nice looking animal may produce very poor milk. Some breeds like the Jersey and Guernsey are noted for the richness of their milk, while other breeds notably the Holstein-Friesian are famous for larger amounts of milk poorer in quality especially in butter fat. The butterfat content of the milk of all cows increases

as the lactation period advances. That is, the milk of a fresh cow is not as rich in fat as the milk of the same cow six or eight months after freshening.

The average composition of milk as determined by a great many analyses is about as follows:

Fat.....	3.90%
Sugar.....	4.75%
Proteids.....	3.40%
Mineral Matter.....	.75%
Water.....	87.20%
	100.00%

It will be noted from the above that water makes up the greater part of the milk, and that the part of greatest commercial value, fat, is very small compared with the whole. As butter is



Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 465 with special terms and compare Kalamazoo prices with others

Cash Or Time Payments

We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on **easy time payments** or pay cash if you like. Either way—you save \$10 to \$20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the Freight

Kalamazoo Stove Co.
Kalamazoo, Mich.

**"A Kalamazoo
Direct to You"**



made almost entirely from butterfat, the wise farmer will always study his cows to determine which ones give milk rich in butterfat. The only real safe way to determine this is by use of the Babcock milk tester. Skim milk owes its feeding value to the presence of the other solids indicated in the foregoing analysis.

There are many small living organisms in milk known as bacteria. These are very, very small plants, so small, indeed, that many thousands of them may live side by side within the space of a single inch. Like all other plants they must eat in order to live. As the different parts of milk furnish just the diet they need they can find no more satisfactory home than a pan of this fluid. There are many forms of bacteria found in milk and most of them are undesirable. Sometimes milk has a bitter taste. This is due to the presence of a certain kind of these minute organisms.

Other kinds give a peculiar bluish or reddish color. There are some kinds that are desirable and necessary, for instance the kind that causes milk to sour. It may seem strange, but if all the bacteria in a sample of milk were killed and no others allowed to enter the milk would remain sweet for weeks. Since it is necessary for milk to sour in the ripening process, the growth of this particular kind, known as "lactic ferments," should be encouraged. They grow quickly and do best at about 70° temperature. The undesirable forms will live from day to day in poorly washed milk cans and in damp mouldy cupboards and refrigerators. All milk cans, pails, pans, etc., should be thoroughly washed and scalded. Boiling water will kill all kinds of germ life. Sunshine is also destructive to this kind of life; hence it is a good practice to place the milk pails and cans where the sun will shine directly on them. The refrigerator, milk house, basement or any other place where milk is kept should always be well aired and dry for the same reason.

Practicum

Secure two bottles, wide-mouthed ones like olive bottles if possible. Wash them both thoroughly, then place one in a kettle or basin of warm water. Put this on the stove and allow the water to boil for ten minutes. Remove the bottle with the mouth downward and when all the water has dripped from the mouth, cork it while the mouth is still downward with a piece of fresh, clean, absorbent cotton. Take some new milk and heat it in a basin until a thin skim appears on the surface. Keep it at this temperature without allowing to boil for ten minutes. Now uncork the sterilized bottle, fill quickly, and replace the stopper. Rinse the other bottle with sour milk, fill with sweet milk and leave

Look for the Steel Keg at Painting Time



Spring painting time will soon be here and buildings will need one or more coats of pure white lead and linseed oil, for livening them up or to save them from decay. We have a special word for those who have used our white lead before and could not be induced to use anything else in their painting.

It is about our new steel keg. This is a new package this year and takes the place of the long familiar oak keg. The white lead is the important thing, but knowing the package insures your getting the genuine material. Please look at the illustrations below—the new kegs are of steel, gun-metal finish, and come in two shapes as pictured. The one-hundred pound size has parallel sides; the smaller sizes taper toward the bottom.

Steel is the ideal material for packing white-lead-in-oil for paint purposes because, not being porous, it does not absorb the oil, and the lead always stays moist. The three smaller sizes named have bails and, being steel and seamless, they make the finest kind of utensils for various purposes after the white lead has been used. Liquids can be boiled in them.

To be sure of getting absolutely pure white lead, look for the Dutch Boy Painter on the side of the new steel keg.

Color Schemes and Suggestions: For those contemplating painting we have a package of helps, including books of color schemes, giving artistic ideas for carrying out color harmony both for interior and exterior painting. Free. Ask for "House-owners Painting Outfit 38."

NATIONAL LEAD COMPANY

New York Boston Buffalo Chicago Cincinnati Cleveland St. Louis
(John T. Lewis & Bros. Co., Philadelphia) (National Lead and Oil Co., Pittsburgh)



open. Keep the two bottles at about room temperature for four or five days then examine.

RESOLUTIONS OF N. D. E. A. Minot, Dec. 23-31

The State Teachers' association desires to express to the city of Minot its very high appreciation of the hospitality it has received at its hands during the existence of the twenty-third annual session held at that place. It extends its heartiest thanks to the Commercial club for its consideration, to the representatives of the city for their reception and elaborate entertainment and to the citizens of the city for their uniform

kindness and liberality, and wishes to voice its surprise at the rapid development of the northwestern part of the state, and to express its admiration of the importance, vigor and beauty of the city of Minot as its metropolis.

The association commends and indorses the valuable work the committee of seven has done during the past year and continues its existence during the coming year to complete its work relative to the elementary schools and to report the same at the next annual meeting; it recommends that in any reconstruction of the elementary course of study which may be undertaken by the state department of public instruction the principals and suggestions embodied

in the report of the committee of seven be followed.

We recognize the rural school as the most important factor in the education of the state; that one of the most urgent needs of the times is an improved quality of teachers for the rural schools. We recommend, (a) consolidation of the rural school as a means of improvement of school organization and surroundings, and also for the accomplishment of the improvement in the quality of teachers. (b) Owing to the fact that the normal schools and other state institutions are at present unable to supply an adequate number of trained teachers and that it is certain that it will be many years before these institutions will supply a sufficient number of these teachers, we therefore recommend that provision be made by the state high schools for the preparation of rural school teachers. (c) We are of the opinion that no permanent improvement in the quality of the rural teaching force can be hoped for or expected until there is a marked advancement in the wages paid. (d) We believe that the educational interest of the state would be advanced by making the length of term uniform in both rural and city schools.

We recognize the work that is being done at the agricultural college, and at the normal and industrial school in the preparation of teachers in agriculture, domestic science and mechanic arts, so ably supplementing the efforts of the normal schools and teachers college to keep the supply of efficient instructors, somewhat near the demand.

The industrial training exhibit arranged for by the committee of seven under the direction of President Kern and thru the enterprise of the exhibiting schools, bespeaks our admiration and will, we are sure, be productive of good results in the teaching of those lines of work in all schools.

We believe that in the interest of fairness, the executive committee ought hereafter to arrange the program so that all meetings, sectional and general, be held within the time limit of three days as has been the custom heretofore and is still the custom in older associations in our neighboring states.

We recognize the need of an educational revival in our state as outlined in our president's annual address and recommend that steps be taken by our state educational department toward that end.

This association extends its sympathies to Professor E. F. Ladd of the agricultural college in the great loss he has sustained personally in the destruction by fire of the records of 20 years of arduous labor and research.

The teachers of this association as a body recognize the great worth of our state superintendent and brother, W. L.

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are made for working men of all classes and are "built on honor." You can save money by wearing them. Will outwear any other make. To be sure you are getting Mayer Shoes, look for the Mayer Trade Mark on the sole. Your dealer will supply you; if not, write to us.

FREE—If you will send us the name of a dealer who does not handle Mayer Work Shoes, we will send you free, post-paid, a beautiful picture of George Washington, size 15x20. We also make Honorbilt Shoes for men, Leading Lady Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.

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Stockwell and appreciate to the full his consistent labors for the cause of education in North Dakota.

SOME DIVERSIFIED FARMING

Corn Culture in North Dakota

By Prof. W. R. Porter

Will it pay to grow corn in North Dakota? is a question that farmer after farmer has been asking himself from year to year, and every year sees more and more farmers answering it in the affirmative. The average price of land does not exceed thirty dollars per acre in this state. The average price of land in the corn belt probably exceeds one hundred dollars per acre on an average. With interest at six per cent North Dakota land would have to earn \$1.80 per acre in interest alone, and land in the corn belt would have to earn \$6.00 per acre in interest. This gives the farmer of this state \$4.20 of an advantage over the farmer of the so-called corn belt.

Bushels per Acre

The next question is, "How much corn can be raised per acre in North Dakota?" This is a rather hard question to answer satisfactorily because of the lack of data. It is, however, twenty bushels or more.

The amount of fodder produced is probably about 6,000 pounds or three tons. Sometimes more than this will be produced and sometimes less, depending on the season and the variety

planted. This yield, of course, can only be expected on land that has been well cared for.

Cost of Production

Below is an estimate of the cost of producing an acre of corn in North Dakota, in which a liberal allowance is allowed for labor.

Interest at 6 per cent of land	\$30	\$1.80
Labor of applying 10 loads of manure	5.00	
Labor of plowing	1.00	
Harrowing four times	.50	
Planting	.75	
Cultivating six times	4.00	
Cutting	1.00	
Shocking	1.50	

Total cost\$16.15

The University of Minnesota in Bulletin No. 97 estimates the cost of producing an acre of corn at \$11.77 per acre when the ears were husked from the standing shocks and \$14.75 when the corn was cut, shocked and shredded.

Average Yield Per Acre

Will not be below 20 bushels, giving thus a net return of \$6.85 per acre, as seen by the following table:

20 bushels at 60c	\$12.00
2 tons fodder at \$3.00	6.00
Increase in the value of land for the following crops	5.00

Total yield\$23.00

Why Farmers Should Grow Corn

Another reason why a farmer should grow corn is because it is a crop that should be fed on the farm. This necessitates the keeping of livestock, which

means increased barnyard manure and increased fertility on the entire farm. The growing of corn means cattle, hogs, clover and alfalfa, diversified farming, a more sane and safer agriculture, than has ever been practiced in this state in the past.

Another reason for growing corn is the fact that it is the only cultivated crop a farmer can grow on a large scale, with the possible exception of potatoes. The average farm in this state is so over-run with weeds, such as mustard, wild oats, kinghead and thistles, that it is absolutely necessary to grow a cultivated crop once in five or six years to hold in check these pests unless summer-fallowing is practiced, a method that yields no returns for labor applied, that gives no returns from the land for an entire year and a method that very rapidly depletes soil fertility.

Summed up, the three great reasons why a North Dakota farmer should grow corn liberally are: first it checks or destroys weed pests; second it necessitates the keeping of large numbers of livestock which increase the fertility of the entire farm, and third, it pays in dollars and cents a net gain of approximately \$6.85 per acre.

Preparation of the Land for Corn

After a farmer decides to grow a field of corn, the first thing he should consider is the choice and proper preparation of his land. The land that should be used for the growing of corn should be the weediest on the farm, because corn if handled right will clean the land of most weeds. It should have a dressing of about ten loads of manure per acre, preferably before it is plowed; but if applied to plowed land it will cause no difficulty if worked into the soil by means of a disc harrow.

The manure ferments in the spring and warms up the soil so that the corn gets an early start and more plant food thruout the season. If there are any weed seeds in the manure they will be destroyed if the corn receives the proper cultivation.

The land should be fall plowed because such land retains the moisture and warms up much faster in the spring. The land should be dragged early in April and again about the 1st of May in order to save the moisture, warm the soil and start all the weed seeds possible.

Selection and Testing of Seed

Selection of good seed is probably one of the most important things in the successful culture of corn in North Dakota. Buy only from reliable seedsmen. Write to several for samples of the variety you want with price quotations. Insist on being supplied with

seed corn on the ear. When you receive these samples, test the germinating ability by placing 100 grains between moist cloths in a pie-pan on the kitchen window. If 98 grains produce good strong sprouts you have excellent seed. At least 95 grains or 95 per cent should grow, because seed corn that germinates a high percentage almost invariably has very high vitality as well, which is very important in sections with a short season short season such as prevails here.

To grow your own seed is the most satisfactory way to get seed corn. In the field selected for your seed, detassel the weak stalks before the silk comes out. When the corn is ripe,

select the earliest, best formed, well filled ears, from good healthy stalks that bear the ears well up from the ground. Air-dry these ears in a building with a good roof and with free circulation of the air until about the first of November. After this it should be fire-dried for a couple of weeks at a temperature not exceeding 75 F. It should then be stored in a dry place (free from steam or other vapor) where it will not be subjected to a freezing temperature. Seed corn should be left on the cob all winter and in the spring its germinating power should be tested as described above.

Shade Trees and Gardens.

C. B. Waldron, N. D. A. C., Editor.

I would like to plant a hedge over a high ridge close by my buildings. Do you know of any trees which are better adapted for that purpose than the golden willows.

J. P. Hemmingsen Shawnee, N. D.

Answered by C. R. Waldron

The question of live fences for dry lands in a cold region is one that has been much discussed, and there are varying opinions as to the suitability of different plants for this purpose.

In extremely dry locations the Russian Artemisia is used. This is a plant that is quite indifferent to the kind of soil upon which it grows and the amount of moisture which it receives. It is a sort of half woody plant, dying down more or less each year, and making a strong growth in the spring. It is no protection against stock, but answers fairly well for a wind-break and helps to define the boundaries of a place. It is not very highly ornamental and is grown only when other things fail.

Another plant that is recommended for such situations is the Russian Wild Olive, or Oleaster. This is a native of a very dry country and will grow on almost any kind of soil. Its growth, however, is not very rapid in the driest locations. By mulching and cultivation it succeeds where almost any weedy plant will grow. It makes a more formidable hedge than the willow but does not grow so tall. After two or three years it should be cut to the ground. The new shoots grow up very rapidly and with their stiff thorny habit of growth make in time a stock proof hedge.

The Russian willow is not supposed to be suited to dry locations but on account of its strong rooting habit it succeeds very well, tho there is no great

amount of moisture in the soil. In such locations other trees, specially those of less vigorous growth, like the elm, will not thrive.

For hedge purposes only, the Russian Olive would probably be the best, but for a combination hedge and wind-break I should prefer the willow if the soil is not so dry as to make the growth of this plant impossible.

VARIETATED ALFALFAS

Within recent years alfalfa has forged to the front as a forage plant in the United States with extraordinary rapidity. In fact it may now be considered one of our most important crop plants. It is grown to some extent in all sections, but it is only in the western half of the country that it takes rank as a leading forage crop. In most parts of the West the ordinary alfalfa appears to be well adapted to prevailing conditions, but for localities where drought



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Will grow in the house or out of doors. Hyacinths, Tulips, Gladiolus, Crocus, Fuchsias, Oxalis, Tuberoses, Begonia, Jonquills, Daffodils, Chinese Lily, Dewey Lily, Gloxinia, Lilies of the Valley—all postpaid, 25c. in stamps or coin. As a premium with these Bulbs we will send FREE a big collection of flower seeds—over 200 kinds.

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SEED OATS

Seed Oats. Has sprangley, heavy heads, large plump berry. Northern grown. Yield 1909, 75 and 100 bushels per acre. Ripens two weeks earlier than ordinary oats. Weighs 50 pounds per bushel. Send 12c. in stamps for sample.

THE P. L. A. FERGUSON CO., SEEDSMEN,
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Ferguson's Special No. 1 White Early Market

resistance is important, and along our northern border where ability to stand extremes of cold is essential, it has been found very desirable to secure improved strains.

The species of alfalfa ordinarily grown bears violet-colored flowers, and its seed pods are coiled into close spirals. Persia was probably the original home of this species. There is, however, another species of alfalfa growing wild in Siberia and throught the greater part of Europe which bears yellow flowers and whose seed pods are sickle-shaped. The prostrate stems and poor seed-bearing qualities of this species are obstacles to its use as a forage plant. It is, however, very drought-resistant and is able to stand very low temperature without winter-killing.

Where the yellow-flowered alfalfa grows alongside fields of ordinary alfalfa, there is a tendency for the species to cross and produce hybrids combining some of the qualities of both species, and bearing both violet and yellow flowers. In this way have been naturally produced variegated varieties which are better adapted to stand extremes of cold than ordinary alfalfa. Variegated varieties, tho possessing only 5 to 10 per cent of the yellow-flowered parentage, are greatly superior for rigorous northern climates.

The strains of variegated alfalfa which have assumed greatest importance are those known as "sand lucern," "Grimm alfalfa," and "Canadian alfalfa." In many tests, the variegated strains have resisted winter-killing better and have given larger yields than ordinary alfalfa in the Northwest and Canada. The Grimm alfalfa is grown with remarkable success in Minnesota and North Dakota. It is thought that some variegated strain may prove to be more successful than ordinary alfalfa in the Eastern States, but this has not yet been clearly demonstrated.

The United States Department of Agriculture, which has done a great deal of work looking toward the extension of alfalfa culture, has just issued a bulletin giving a very interesting account of the origin and character of these variegated alfalfas.

HEAVY DRAINS ON NATION'S FORESTS

"The total yearly drain upon our forests, not counting losses from fires, storms, and insects, is some twenty billion cubic feet," says R. S. Kellogg, assistant forester in charge of the office of forest statistics, in a publication just issued by the Forest Service on "The Timber Supply of the United States."

"Our present forest area of 550 million acres may be roughly estimated to consist of 200 million acres of mature forests, in which the annual growth is bal-

anced by death and decay, of 250 million acres partially cut or burned over, on which, with reasonable care, there is sufficient young growth to produce in the course of time a merchantable, but not a full crop of timber, and 100 million acres of more severely cut and burned over forests, on which there is not sufficient young growth to produce another crop of much value.

"Taken as a whole, the annual growth of our forests under these conditions does not exceed twelve cubic feet per acre, a total of less than seven billion cubic feet. That is, we are cutting our forests three times as fast as they are growing. There is menace in the continuance of such conditions. While we might never reach absolute timber exhaustion, the unrestricted exploitation of our forests in the past has already had serious effects, and it will have much worse if it is allowed to continue unchecked.

"White pine, for instance, which was once considered inexhaustible, has fallen off seventy per cent in cut since 1890, and more than forty-five per cent since 1900. The cut of oak, our most valuable hardwood lumber, has decreased sixteen per cent since 1900, and that of yellow poplar twenty-two per cent. The same story will be told of other woods if they are not conserved.

"The fact that timber has been cheap and abundant has made us careless of its production and reckless in its use. We take 250 cubic feet of wood per capita annually from our forests, while Germany uses only thirty-seven cubic feet, and France but twenty-five. On the other hand, Germany, who has learned her lesson, makes her state forests produce an average of forty-eight



12 Hardy Blizzard Belt Strawberry Plants FREE!

Everybody likes strawberries and to prove that our "BLIZZARD BELT" plants are the strongest rooted and heaviest fruiterers, we offer to send ONE DOZEN selected plants to you FREE OF CHARGE. We picked 35 quarts of fine fruit from a test bed of but a dozen strawberry plants set the year before. You can do as well. If you care to send 10 cents for mailing expense, we will add 6 BABY EVERGREENS 2 years old and send all to you at proper planting time. Write to-day and we will enter your name for the plants and send you our CATALOGUE and BARGAIN SHEETS of HARDY "BLIZZARD BELT" fruits by next mail. Address

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Peas Clover Corn

North Dakota grown seed. Send for catalog

PURE VELVET CHAFF WHEAT
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Hardest of All Trees

Grown on the Dakota prairies.
Salaries or commissions paid weekly.

The Northwest Nursery Co., Valley City, N. D.

Kubanka No. 5639 Duram Seed Wheat For Sale

Original seed from Prof. Shepard. Grown on new land. \$1.30 per bushel. Ten bushel lots or more \$1.20, cleaned. Sacks, 20 cents.

GEO. LIPPMAN, Granville, N. D.

MORE CORN THAN IOWA

Minnesota raised more Corn per acre last year than Iowa, the famous Corn & Hog State. Why? Because Minn. Corn is impregnated with vigor, vitality and productiveness of our cold northern climate and stands more hardships than other corn; furthermore thousands of bus. of our famous Faribault grown Seed Corn are planted here every year, which helped to score such high average. Such varieties as Golden Jewel, Silver Jewel, Rice Co. Mammoth, etc. we have bred up for perfectness of type, early maturity and freedom from barrenness and are wonderful yielders. Produce good sized ears and yield from 85 to 125 bus. per acre. No matter where you are located plant our Faribault grown Corn and produce a big crop. We grow also the earliest kinds for the extreme North, the N. D. Agr. College Golden Dent, 60 day Flint, etc.

On our Faribault Seed Farms we grow also the best kinds of Seed Oats, Wheat, Barley, etc. from pedigreed Seed Stock.

10 samples of the best kinds of 10c. Seed Corn & Seed Grain for..

Nursery stock at wholesale prices. Write for large illustrated seed book.

Farmer Seed & Nursery Co.,

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cubic feet of wood per acre. We have as fast growing species as Germany, or faster, and as good or better forest soil if we protect it.

"The necessity for more farm land may eventually reduce our total forest area to 100 million acres less than it is at present. It is entirely possible, however, to produce on 450 million acres as much wood as a population much greater than we have now will really need if all

the forest land is brought to its highest producing capacity and if the product is economically and completely utilized. But to read the necessary condition of equilibrium between timber production and consumption will take many years of vigorous effort by individual forest owners, by the states, and by the National Government. None of them can solve the problem alone; all must work together."

FROM THE NATION'S CAPITOL

By GUY E. MITCHELL

WHAT IS PARADISE..

Professor Willis L. Moore, chief of the United States Weather Bureau, believes that Paradise will be understood and described by science in the near future.

"What is Paradise? Where is it?" he asked at a recent meeting of Grand Army men in this city. "We are now in a most astounding age of discovery and research, but we do not understand what Paradise is. I believe, however, that within the near future science will be able to understand it all."

Professor Moore explained that winds from the east are depressing, and cause people to become low spirited, disconsolate and to want to die, while winds from the north invigorate, stimulate and fire mankind. He then described a delicate instrument at the weather bureau, called the bolometer, which records one one-hundred-thousandth part of a degree. Put it on the red bar of a flag, he stated, and it will record one temperature. Place it on the blue, it will record another. The eye can see only seven colors, but there are really twenty-one. An Indian can scent the enemy miles and miles away. These are some of the things which convince the Weather Chief that there are but few things which are not understandable and before long we shall know what Paradise is.

SMALL COTTON YIELD CHARGED TO WEEVIL

At a recent hearing of the House Committee on Agriculture, W. D. Hunter of Dallas, Texas, made the statement that the cotton crop of 1909 is going to be the smallest since 1899. "This is due," he stated, "to the boll weevil in Louisiana and in portions of Arkansas and Mississippi, and to the extreme dry weather in Texas, where the seasonal conditions have greatly interfered with the propagation of the parasites." The boll weevil, he declared, undoubtedly would cause a remarkable redistribution of the production of cotton, first in large areas. What were large centers of production formerly were going to fall down, and,

more than that, there would be a redistribution on the small plantations.

"In the large back-from-the-front areas," continued Mr. Hunter, "the production is going to fall off. According to all we know about fighting the boll weevil, cotton can not be planted profitably in such situations, as these back lands with poor drainage. But the soils and other conditions in certain parts of almost every plantation in the south will permit the planter to continue to raise cotton profitably despite the boll weevil."

Strange as it may seem to those manufacturers who need the money, Dr. Wiley's pure food board has considered that flour middlings which contain 10% of ground corn cob are not "flour middlings" in the meaning of the Pure Food Act.

A short time ago an inspector of the department seized a consignment of 100-pound sacks bearing a tag label reading "100 lbs. Globe Flour Middlings." A sample taken by the Bureau of Chemistry from one of these upon careful test, showed 10 per cent of ground corn cobs. The product was, therefore adulterated in that ground corn cobs had been substituted in part for the middlings. The facts were reported to the Secretary of Agriculture and in turn to the United States Attorney for the middle district of Pennsylvania, and after the usual court proceedings the findings of the department were upheld.

RURAL DELIVERY GROWS

Fourth Assistant Postmaster General P. V. DeGraw indicates in his annual report, just issued, that rural delivery has not only made advances in usefulness and efficiency during the last year, but has taken a long stride toward a thoroly practical and economical working basis.

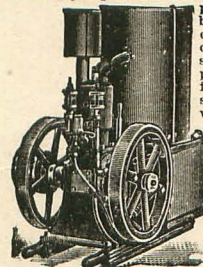
The first rural routes were established on October 1, 1896, at Halltown, Uvilla, and Charlestown, West Virginia. Others followed at once, and by the close of the fiscal year the experiment showed satis-

Try Kerosene Engine

30 Days Free

Gasoline Prices Rising.

You can't run a farm engine profitably on gasoline much longer. Price of gasoline going sky high. Oil Companies have sounded the warning. Kerosene is the future fuel and is now 5c to 10c a gallon cheaper than gasoline. The Amazing "Detroit" is the only engine that uses common lamp Kerosene (coal oil) perfectly. Runs on gasoline, too, better than any other. Basic patent. Only 3 moving parts. Comes complete ready to run. We will send a "Detroit" on free trial to prove all claims. Runs all kinds of farm machinery, pumps, saw rigs, separators, churns, feed grinders, washing machines, silo fillers and electric lights. Money back and freight paid both ways if it does not meet every claim that we have made for it. Don't buy till you get our free catalog. 2 to 24 h. p. in stock. Prices \$29.50 up. Special demonstrator agency price on first outfit sold in each community. 2000 satisfied users. We have a stack of testimonials. Write quick. (20)



The Amazing "DETROIT"

Detroit Engine Works, 385 Bellevue Ave., Detroit, Mich.

factory results. By the fall of 1897 44 routes were in operation. By June 30, 1900, the number had increased to 1,214.

Compare these figures with those in Mr. DeGraw's report. On June 30, 1909, the service was in operation on 40,628 routes, with 40,499 carriers. On only 667 of these routes, was service tri-weekly. During the year 1,415 new routes were established, or more than the whole number in operation in 1900.

An increase of 96% in the amount of mail handled on rural routes in the last fiscal year over that handled four years ago is also shown. In commenting on this subject, Mr. DeGraw says:

"This remarkable increase is conclusive evidence that the institution of rural delivery has enlarged the amount of mails handled and therefore increased the revenues. This is true, altho 45% of the bulk of the mail on rural routes is second-class matter, as the increase applies to all classes of matter, especially to letters and postal cards, the latter due to the enormous use of souvenir or picture postcards.

"The installation of rural delivery as a rule has been followed by an increase in the amount of mail delivered and collected within the territories respectively covered by that service."

PACKAGE DELIVERY DESIRABLE

Under the present regulations a rural carrier is permitted to handle packages as express matter provided they contain unmailable matter or if they weigh over four pounds. For this they may charge the patron requesting the delivery of the package, a fee for the accommodation. Mr. DeGraw recommends, however, an experiment for a limited period of the delivery of packages on rural routes at such rates as may seem expedient. A good many students of the subject believe that if this system were applied to all rural routes

now in operation that the postal deficit would not only disappear, but that there would be a healthy balance.

No phase of the government service has shown a more remarkable growth than the rural delivery system, of which Mr. W. R. Spilman is superintendent. It is an efficient service, and is in itself a testimonial to the fact that the government is capable of handling a large business project effectively. The comforts and advantages it lays at the door of millions of American families are far beyond estimation in dollars and cents. It is not too much to say that the institution of rural delivery has worked and is working profound changes in our civilization and our politics. The people living in the country nowadays take the daily papers and weekly and monthly periodicals, and are as thoroly in touch with every day's developments as the residents of the cities. They form their own opinions thru reading and are showing a growing tendency to independence of thought and action in consequence. To a large extent rural delivery has made life in the country as comfortable as life in town, and if the flow of population from the farm to the city is checked, rural delivery will have no small part in accomplishing it.

ADVISER TO SIAMESE KING

Desiring to learn something about farming, the King of Siam, turned to America for an instructor. The Siamese minister began casting about for some one to fill the position his royal master desired to create. Dr. S. A. Knapp of the United States Department of Agriculture, recommended Mr. J. C. Barnett of Tallulah, La., for the place. Mr. Barnett has sailed for Bangkok, making stops in Europe and Asiatic countries en route in order to study methods and conditions as he may find them. Arriving at the Siamese capital, he will immediately take up his duties as a sort of secretary of agriculture in the royal cabinet.

This American who goes to teach the Siamese how to grow rice, cotton and other products is a Mississippian by birth. Until three years ago he was a farmer near Canton, Mississippi, but his success was so marked that he was appointed district agent in the farmers' co-operative demonstration work in Louisiana. The post he has accepted is a very desirable one, paying \$6,000 a year, with all expenses paid.

RISE IN MEAT PRICES

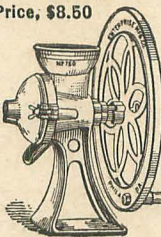
The price of meat goes up; the demand for meat increases; the supply decreases; the price paid the farmer for live animals decreases.

The demand grows because the popu-

"ENTERPRISE"

BONE, SHELL AND CORN MILL

No. 750
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lation grows, while the capacity to consume is greater because of the larger number of persons at work as compared with the industrial condition a year ago. The lessened supply is shown by actual statistics, the receipts of live-stock at the great markets being 174,113 less than during September than last year. Shipments of fresh meat to cities of the East have fallen nearly 20 per cent. The output of canned meats has also decreased.

But at the same time the price of cat-tle paid to the farmer has fallen. This is charged against the combination of great dealers in meat. Their course it is asserted, has caused agricultural in-dustry in the West to change gradually to products other than meats, while the grazing capacity of the western ranges has decreased. The beef combination has also turned its attention to hides and leather, and is said to have invested some of its capital in the control of rub-ber. These are phenomena that have passed to some extent under the ob-servation of the President, and the pre-diction does not seem unreasonable that he will include the subject in a message to Congress. At any event the subject will be thrashed out thoroly by the congressional committee which is to in-vestigate the abnormal condition of prices of food stuffs.

GERMANY ENCOURAGES POTATO GROWING

The cultivation of potatoes is indi-rectly encouraged by the German gov-ernment, which confers special privileg-es upon farm distilleries consuming the products of the land. In respect to agri-cultural distilleries, the Imperial gov-ernment permits them to produce a cer-tain amount of grain or potato alcohol, the amount depending upon the size and the location of the farms and the annual demand for the product, upon the pay-ment of a revenue tax of 25 cents in-stead of the usual tax of 29.75 cents per liter. Alcohol distilled in excess of this amount is subjected to the higher rate of tax and denatured alcohol is not subject to any tax at all. The slops are used for feeding and the refuse is returned to the land.

At the present time over 200 varieties of potatoes are raised in Germany, the most of which are used indifferently for all purposes. Naturally, such varieties as have a small content of water are best adapted for the production of alcohol. In the proximity of large cities farmers seek to raise favorite table varieties, but in the remote, particularly the north-ern, portions of the country the crop goes, to a large extent, to the alcohol distilleries or starch factories or to cat-tle feeding.

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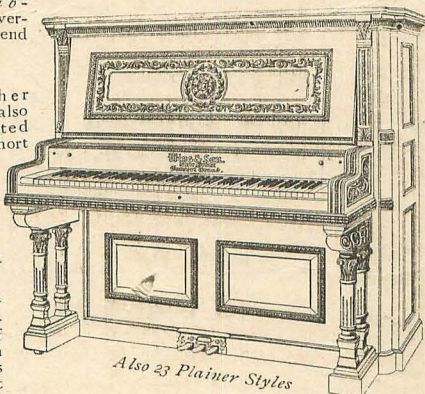
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